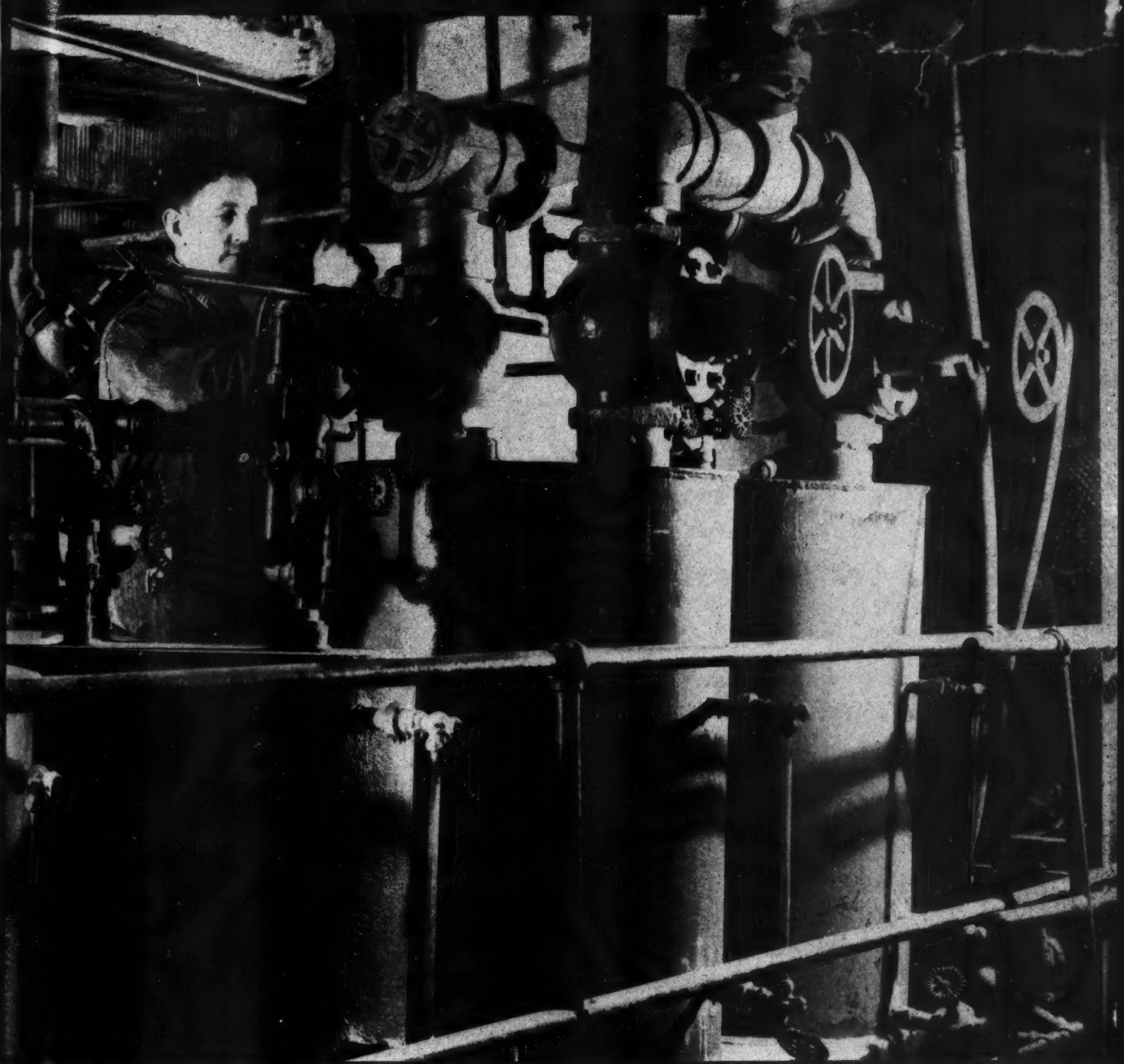
arm Chemicals



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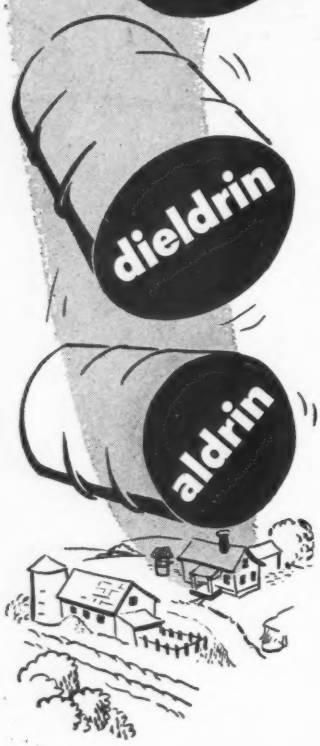

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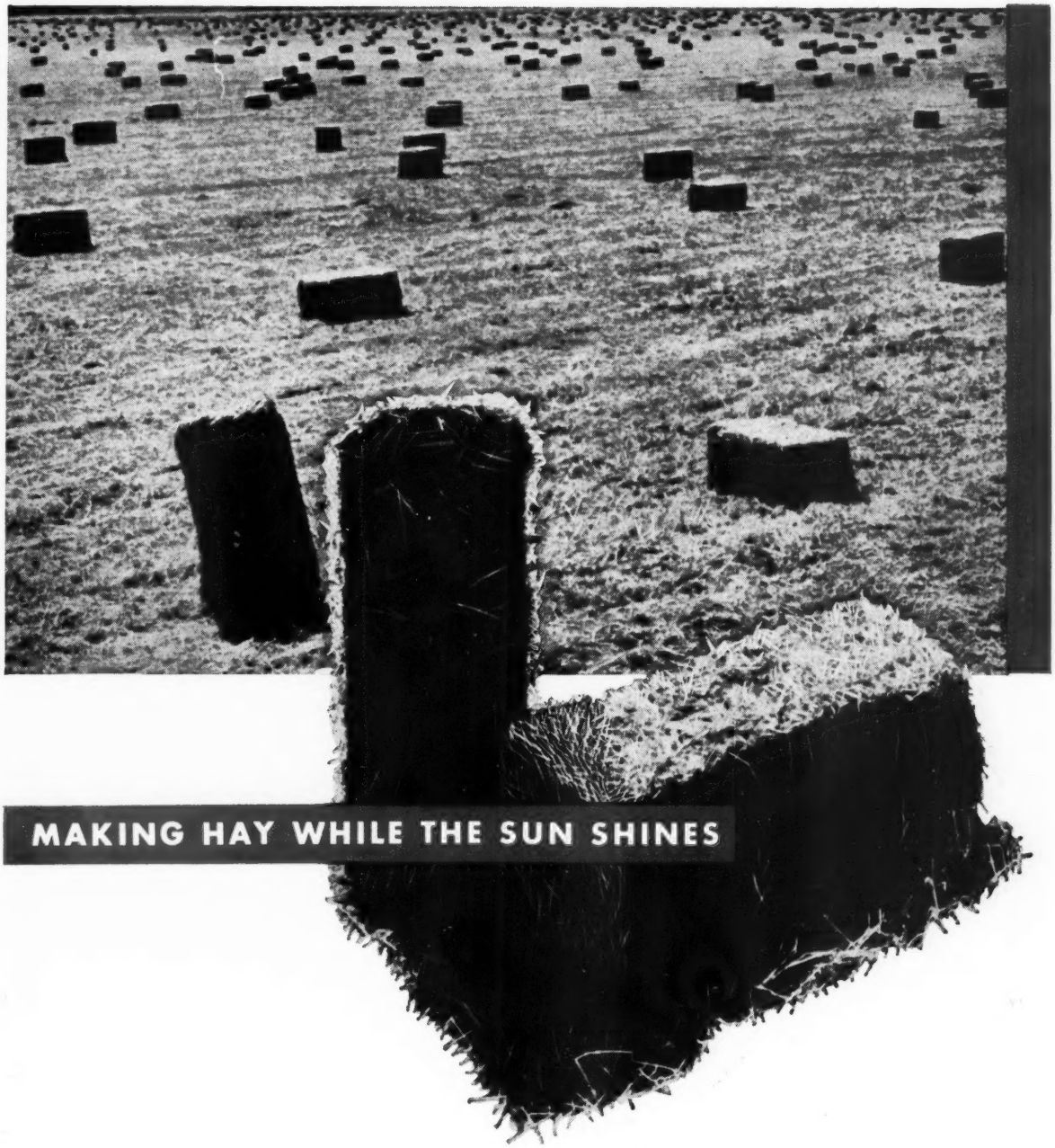

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BETTER THINGS FOR BETTER LIVING
...THROUGH CHEMISTRY

In this issue . . .

Producing a quality product is the first requisite for successful sales in the farm chemicals industry, just as it is in any industry. But, as is the case in any field, how you package your product can play a vital role in your profits. The materials you use, how you use them and the printing included on the package are all important phases of your business.

That's why we included the special ***Packaging Section*** in this month's issue. We have tried to round up all the latest information on as many sides of packaging as possible.

First, on page 15, John A. Sutherlin, sales manager for Chase Bag Co., writes on the role of the cotton fertilizer bag in fertilizer sales, merchandising and distribution, emphasizing the utilization of dress print bags for clothing.

What materials are fertilizer and pesticide companies using to package their products? That question is answered by the graphs on pages 22 and 23 in this issue.

The increasing use of polyethylene lined or coated bags for packaging pesticides and fertilizers is easy to understand when you read about the experiences of Miller Chemical & Fertilizer Co., on pages 26 and 27.

The scientific approach to packaging, especially as it pertains to chemical specialty products, is discussed in the fascinating article by Walter L. Hardy, on page 28.

Also in the section you'll find news of conventions and trends and developments in the field during the past few months. At least several of the articles and shorts should help in solving your particular packaging problems.

There's always something important to talk about every time one of the trade associations in the fertilizer and pesticide industries meets. This month the National Agricultural Chemicals Association convenes in New Orleans for its annual spring meeting. Pending legislation on pesticides, growing out of the Delaney committee reports, should be a hot topic.

The economics of fertilizer utilization can't be over emphasized, not with world conditions what they are today. With farm prices taking a tumble, use of fertilizer to increase yields is more important than ever. Read what W. R. Allstetter, of the National Fertilizer Association, says about the subject on page 37.

We never realized what a complete line of pesticide materials John Powell & Co., Inc. had until we visited with H. Alvin Smith, president of the company, in his New York City office. The company started with pyrethrum many years ago but it now is a supplier of every pesticide material. See the illustrated feature on John Powell starting on page 42.

Going into the production of triple superphosphate early next year will be Davison Chemical Corp. Read about the company's Bartow, Fla., plant now under construction. Story on page 49.

farm chemicals

Formerly
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Established 1894
PIONEER JOURNAL OF THE FARM CHEMICALS INDUSTRY

Vol. 116 **MARCH, 1953** **No. 3**

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Cover Story

Making pesticide materials is a complex process, especially if you manufacture a complete line as John Powell & Co. Inc., does in its Brooklyn plant. Cover shows one phase of the operations. Story on the company on page 42.

A magazine international in scope and circulation and devoted to manufacturers, mixers, and formulators of fertilizers and pesticides

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317 NORTH BROAD STREET, PHILADELPHIA 7, PA.
Telephone MArket 7-3405

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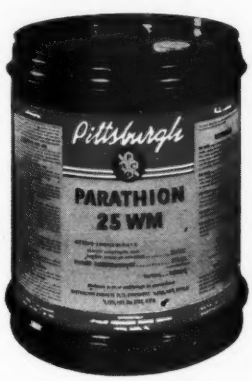

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farm chemicals facts

. . . Briefly Noted

Full-scale production of allethrin has been started by U.S. Industrial Chemicals Co., at its Baltimore plant. Baltimore output assures availability of the insecticide in sufficient quantities to meet consumer needs this year, the company said.

Died: George I. Van Nortwick, former district sales manager of the agricultural, chemical and insecticide division of Sherwin Williams Co.

World food supplies are at record high levels in the 1952–53 season, USDA reports. Production is up 9 per cent over prewar totals. But, cautions the Department, population has jumped 13 per cent.

Reichard

Dirck Reichard has been appointed administrative assistant to John H. Kennedy of Stauffer Chemical Co. Kennedy's post is assistant sales manager of agricultural sales in the East.

Reichard will serve in the New York office and will also contact Stauffer regional distributors and agricultural salesmen.

A big spread in the infestation of tent caterpillars is predicted by the Minnesota Department of Agriculture. The Department issued that warning as part of its educational program against the pests.

"Chemical Control of Insects" is the title of a new volume published recently by John Wiley & Sons. The book stresses the latest developments in the field of pesticides.

Commercial Solvents Corp. has moved its offices from 17 East 42nd Street and 745 Fifth Avenue to 260 Madison Avenue, New York 16.

"Pick Your Safety Target" and "A Gray Day for O'Grady" are two new safety films produced by the National Safety Council. Both are based on accident-reduction plans in industry. They are available from NSC, 425 North Michigan Avenue, Chicago 11, Ill.

International Paper Co. opened a consolidated sales office serving Texas and the Southwest last month. It is located in Dallas, Tex. Transferred to the office were J. W. Dennett, formerly of the Chicago office and H. T. Patton, of the Bagpak Division.

TDE is a highly effective yet safe insecticide for controlling hornworms on growing tobacco, according to the USDA. The Department said TDE provides excellent control and is least hazardous of all materials currently effective against the pests.

A southern safety conference was held March 2 and 3 in Atlanta by the Consumers Cooperative Association. One section was devoted to the fertilizer industry. Speakers included A. B. Pettit, Davison Chemical Co.; G. F. Dietz, Fertilizer Manufacturing Coop., Inc.; F. W. High, Baugh Chemical Co.; C. A. Cox, Virginia-Carolina Chemical Co.; E. F. Carnell, Davison; E. O. Burroughs, F. S. Royster Guano Co. and A. C. Thornton, International Minerals & Chemical Corp.

"Flotal" is the new soil conditioner being offered by Stauffer Chemical Co. The product is derived from a ferric ammonium organic complex. Stauffer said the product is undergoing extensive testing, with low cost an important feature.

Dr. Richard C. Back has been named to serve under Dr. Charles L. Smith, associate director of product development in charge of agricultural chemicals at Ethyl Corp. Dr. Back has worked with Ethyl-sponsored projects at Boyce-Thompson Institute for the past year and a half.

CALENDAR

March 6—Ohio Lime and Fert. Conf., Ravenna, O.
March 11–13—NAC Spring Convention, New Orleans, La.
April 18–19—Packaging Mach. Mfrs. Institute, Chicago, Ill.
June 11–14—APFC Convention, Hot Springs, Va.
June 15–17—NFA Convention, White Sulphur Springs, W. Va.

Siddal

New sales manager of agricultural chemicals for western states is Cameron Siddall, Pennsalt announced last month. Siddall, formerly located at the company's district office in Berkeley, Cal., will have headquarters at the Tacoma, Wash. office. He joined Pennsalt in 1946 after serving four years in the Army during World War II.

Percy J. Ebbott, president of Chase National Bank was elected a director of International Paper Co., recently. He fills the vacancy caused by the resignation of Winthrop W. Aldrich, former chairman of Chase and now ambassador designate to Europe.

Died: George V. Savitz, district sales manager for agricultural potash in the Potash division of International Minerals & Chemical Corp. He had served with International 37 years.

Freeport Sulphur Co. has announced its fourth new sulfur project in two years—development of a sulfur mine in the Louisiana marshland. It is located in Lafourche Parish, 60 miles west of New Orleans.

New member of the insecticide division of Geigy Co., Inc., is J. Franklin McLaurin, president of the National Ginners Association. He will work with other personnel throughout the country concerned with the sale of cotton and tobacco formulations.

Three appointments at Thurston Chemical: O. M. Walstad, manager of the Atlas, Mo. plant; James A. Doyle, superintendent of the chemical section of the Atlas plant and Bert W. Crow, assistant to Doyle.

Died: Harry H. Hollesen, formerly vice president of Synthetic Nitrogen Products Corp. He had resigned that position late last year because of ill health.

Potash mining and utilization in agriculture was discussed at a meeting of The Fertilizer Society (London) Feb. 26.

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farm chemicals outlook

Report from Washington
by Fred Bailey & John Harms

The Delaney proof-before-use bill has proved to be only the kick-off in the drive in Congress to tie up chemicals used in or on foods.

Other proposals are coming along. Notable substitutes for the Delaney bill are two drawn up by Rep. A. L. Miller (R-Neb.), governing chemical additives to foods and pesticides. Then too, legislation by those who deem Delaney and Miller proposals too stringent may be offered before this fight gets much older.

Will some sort of legislation governing chemicals used in or on foods be made law this year? Concensus of legislative leaders we've talked with is that some sort of legislation is bound to come out. Intent of both Delaney and Miller is to drive hard for it. It's a definite possibility.

The bill by James J. Delaney (D.-N. Y.), chairman of the now-defunct special committee on chemicals in foods and cosmetics, is considered the basic proposal . . . the jumping-off place for other bills. Republican legislators, now technically in charge of both houses will take the ball from Delaney . . . but will run in the same direction.

Greater control on chemicals in-on foods is a bipartisan issue . . . elements on both sides of the aisle are for it, just as elements on both sides oppose greater control.

The Delaney bill would establish specific requirements which users in interstate commerce must meet before certain chemicals can be used in or on foods. Food and Drug Administration would have full authority to make determinations . . . to approve or reject.

It's the F&DA bill, drawn up by Vincent Kleinfeld, foremost legal authority on F&DA legislation.

Right of appeal to F&DA would be permitted, and, of course, to the courts too. However, if such a bill passed, appeals to court would almost be useless, for as one observer puts it: If you can't prove it to F&DA, how are you going to prove it to the courts?

The bill expands definitions of chemical additives in the F&DA law. In terms of the bill, any chemical to be used on food in interstate commerce would require proof of safety if it "is not generally recognized, among experts qualified by scientific training and experience to evaluate the safety of such substances, as having been adequately tested to show that it is not poisonous or deleterious, or is a poisonous or deleterious substance which is not generally recognized among such experts as having been adequately tested to show that it is safe. . . ."

Reports to F&DA required by the bill: If the user intends to use such a chemical, reports must be furnished on investigations showing its toxicity; description of the chemical's composition; description of analytical method used to determine how much of the chemical remains on or in food; also, samples, directions for use,

recommendations must be furnished; etc.

Major changes proposed by Miller, embodied in two separate bills, would: Put control authority over pesticides in hands of the USDA . . . limit the length of time the government would have to consider a case . . . and establish an "impartial" board of experts to hear and act on appeals.

At press time, Miller was working on three bills; one each for chemical additives in foods and pesticides, a third to cover chemicals in cosmetics.

Miller, who's considered as somewhat of a congressional expert on the subject, is convinced that the burden of proof of chemical "safety" must rest on shoulders of industry. Miller is an M.D., a former president of the Medical Association of Nebraska, a fellow of the American College of Surgeons and a former State health director.

Chemicals on-in foods is one of the big issues of the day. As such it's a dynamic issue, something new all the time. We'll keep you posted.

The economy knife is not likely to bite into USDA's conservation payment program this year. Secretary Benson, bent on cutting down USDA spending and government help to farmers when they don't need it, is not expected to ask for a reduction now.

We understand he does not intend to buck the commitment to subsidize conservation practices used this year. But he very probably will try in 1954.

Any effort to cut down the $250 million subsidy kitty will run smack into Sen. Aiken (R.-Vt.), chairman of the Senate Agriculture Committee, and a whole raft of Southern congressmen.

Aiken says that lime and trace elements are essential for prosperity on New England farms. The Southern solons have been staunch supporters of ACP for many years . . . they're not likely to change now.

Domestic disappearance of pesticidal chemicals for 1952, and revised preliminary estimates of agricultural requirements for the 1953 crop year have been worked up by the Pesticides Staff, Office of Materials & Facilities, Production & Marketing Administration, USDA. 1952 use and 1953 outlook for some major chemicals are:

Benzene hexachloride. 92.2 million lbs., used in 1952. Between 80 & 95 million lbs., forecast for 1953.

Calcium arsenate. 4.7 million lbs., in 1952; 5-25 million lbs., in 1953.

Copper sulfate. 110 million lbs., in 1952; 85-100 million for agricultural purposes in 1953.

2, 4-D (acid basis). 25.3 million lbs., in 1952; 28-32 million in 1953.

DDT. 70 million lbs., in 1952; 70-85 million in 1953.

Lead arsenate. 17.5 million lbs., in 1952; 18-30 million lbs., in 1953.

Sulfur, ground. 312 million lbs., in 1952, preliminary; 300-425 million forecast for calendar 1953.

2,4,5-T (acid basis). 2.9 million lbs., in 1952; 3.5-5 million lbs. in 1953.

Toxaphene. 35 million lbs., in 1952; 50-75 million lbs., in 1953 crop year.

Caution marks the Administration's attitude toward CMP--whether to drop it entirely or continue some form of it on the books. Many of the top Republicans fear runaway raw materials prices if this control is removed too early. Odds favor continuation of CMP in some form after June 30.

Fertilizer & lime utilization program will not be upset by change in USDA leadership. Over-all supervision of the program in USDA now is under Assistant Secretary J. Earl Coke, former Extension Service chief in California.

It also is understood here that the National Fertilizer Policy Committee, guiding force in fertilizer from government stand-point, also is to be continued under Secretary Benson.

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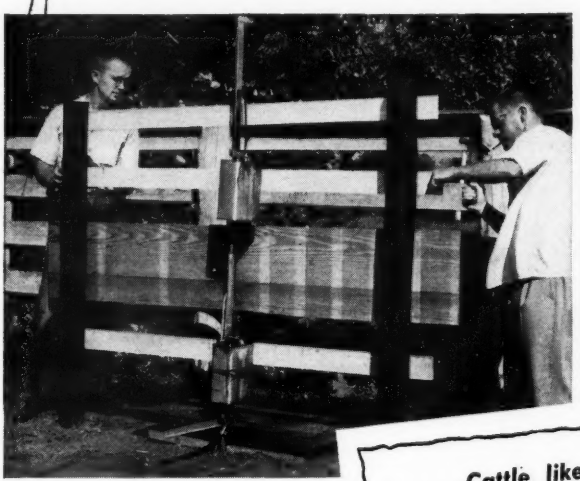
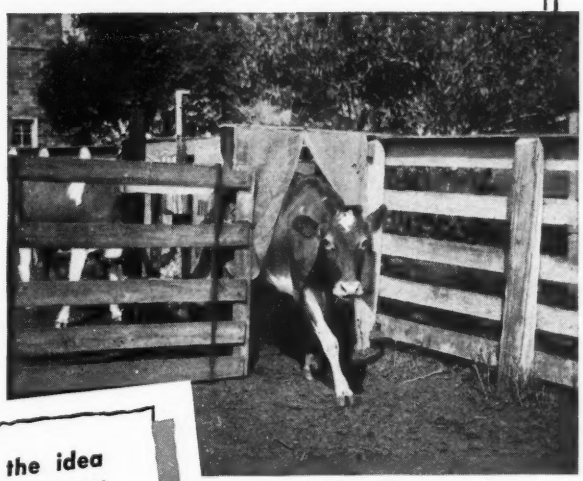
...in the Automatic Sprayer





(Photos by Illinois Natural History Survey)

> ...Cattle like the idea so much that they spray themselves more than they need to...
> **(From Progressive Farmer —Sept. 1952)**

Developed by the Illinois Natural History Survey, the automatic sprayer technique is one of the fastest growing developments in the insecticide industry. Hundreds of sprayers have been installed from coast to coast, and the response from farmers indicates they like the convenience and effectiveness of this method.

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THE TWO PHOTOGRAPHS ABOVE WERE MADE ON THE SAME DAY IN THE SAME AREA. — The trees on the left were fertilized with 5-10-10 fertilizer without trace minerals; the adjoining trees on the right received the same fertilizer plus soluble trace minerals. The same amount of fertilizer was used on each block. These photographs were taken after harvest.

THIS FIELD OF SWEET POTATOES was fertilized with 3-9-12 fertilizer containing soluble trace minerals. The two rows on the left received regular 3-9-12 fertilizer with no trace minerals. Note the great difference in growth, resulting in increased yield and improved quality, where the mineralized fertilizer was used.

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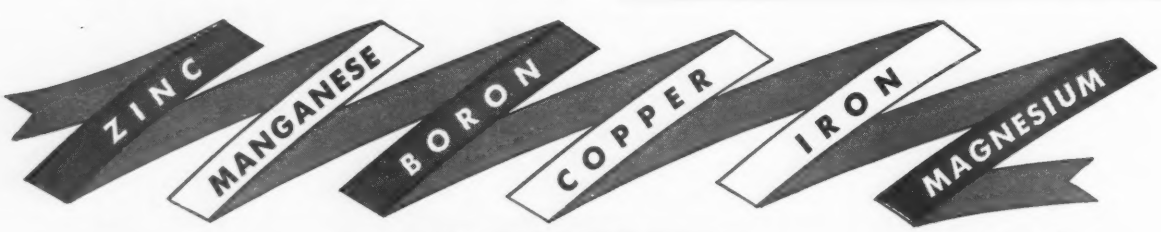

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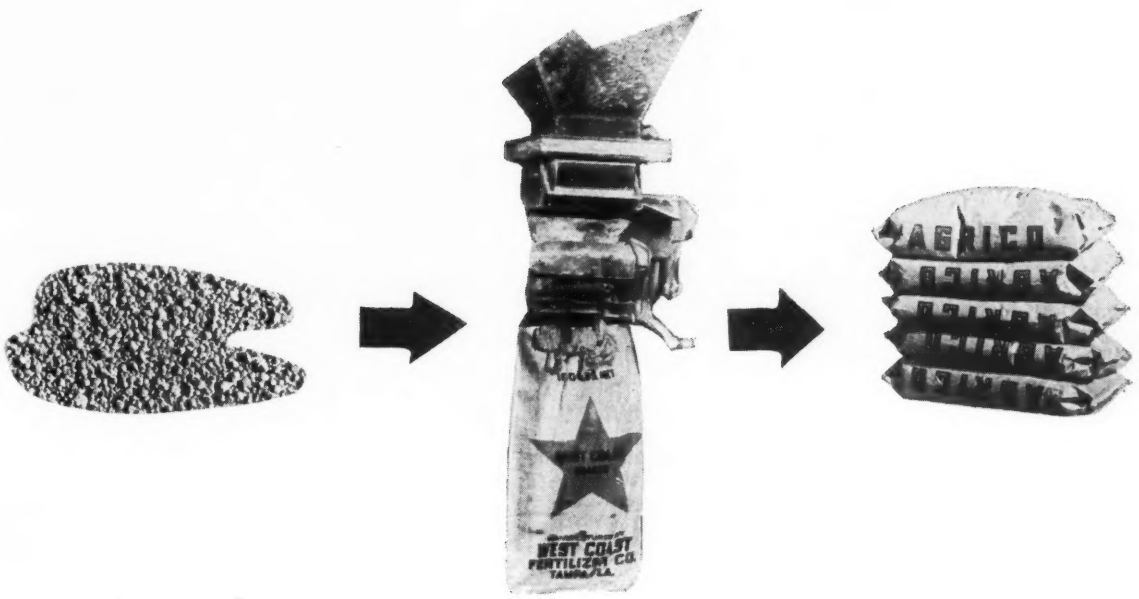
Farm Chemicals

Packaging Section



Latest reports on materials, equipment, techniques in use in fertilizer, pesticide plants

EVERY farm chemicals manufacturer is concerned with packaging, whether he has a small one-room company or a big sprawling network of buildings.

Packaging takes in many things: the materials used to enclose the fertilizer or pesticide product, the method of filling the container and the printing of the brand name or other material on it.

Latest Packaging Information

In this special packaging section of FARM CHEMICALS, an effort has been made to assemble the latest information on all these things.

You may want to know just how much and what kind of materials are being used in the industry for packaging. If so, turn to the graphs on pages 22 and 23.

For those readers interested in cotton fertilizer bags and their reuse as clothing material, the article by John H. Sutherlin on the next page has some points you may not have considered.

Polyethylene Linings

The increasing use of polyethylene linings with multiwall paper bags is featured in the picture sequence on pages 26 and 27, while some important factors to consider in packaging chemical specialities are offered in the article on page 28.

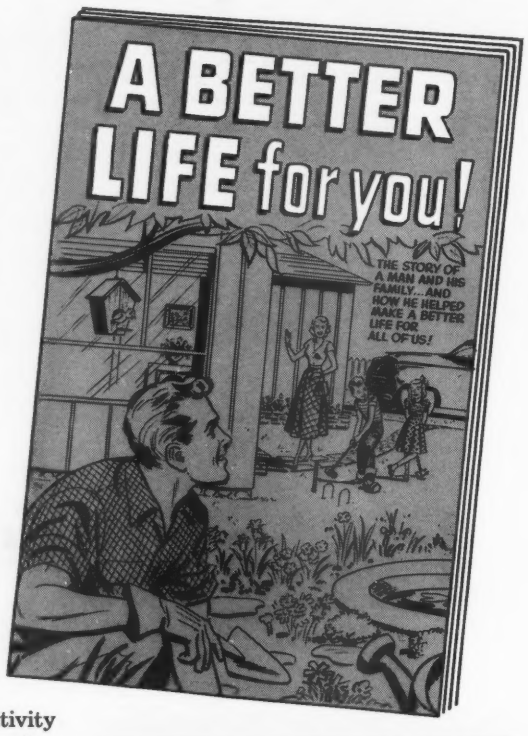
The author, Walter L. Hardy, includes even the psychology involved in attracting potential buyers to your products.

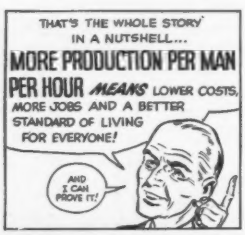
Elsewhere in the section you'll find news of conventions, expositions and latest developments in machinery and techniques of packaging companies servicing the farm chemicals field.

Help your employees understand why increased production benefits THEM

Tested booklet proves greater productivity benefits workers

Here at last is the tested tool you can use to instruct workers on the benefits to THEM of more production per man per hour. To show our own plant workers how increased production improves living standards, Bemis Bro. Bag Co. has developed a handsome, new 16-page booklet that tells in warm, simple-to-follow terms how one man found a better life through better production. Because we feel this story is important to every industry, we are making copies of "A Better Life for You" available to your business . . . for a few pennies a copy.




THAT'S THE WHOLE STORY IN A NUTSHELL...
MORE PRODUCTION PER MAN PER HOUR MEANS LOWER COSTS, MORE JOBS AND A BETTER STANDARD OF LIVING FOR EVERYONE!
AND I CAN PROVE IT!

MACHINES HELP EVERY ONE OF US TO PRODUCE MORE GOODS IN LESS TIME! THE MORE WE PRODUCE, THE LOWER THE PRICE...THE LOWER THE PRICE, THE MORE GOODS CAN BE SOLD...

GOSH! I CAN REMEMBER WHEN A 10-INCH SCREEN COST MORE THAN THIS 20-INCHER DOES TODAY!
I GUESS THEY'VE HEARD ABOUT MORE PRODUCTION PER MAN PER HOUR IN THE TV INDUSTRY, TOO!

Tested with employees at home and at work

Studies show that workers who understand the need for greater productivity work harder, produce more, are far happier. To make sure our employees understand how higher production benefits them, we employed the Psychological Corporation to pre-test "A Better Life for You" before underwriting this project. It's been *proven effective* in interviews in factories and homes across the country.

Executive surveys reveal real need for this program

To get the best available thinking on the vital productivity question, Bemis surveyed more than a thousand corporation presidents and personnel directors across the country. The result: this booklet reflects the suggestions of top-flight management . . . in industry from coast to coast.

IT ONCE TOOK ONE MAN ONE HOUR TO MAKE SIX TIN CANS. THEY WERE SO EXPENSIVE HARDLY ANYBODY COULD BUY THEM!
"TODAY, MACHINES TURN OUT 21,000 CANS AN HOUR AT LESS THAN A PENNY EACH. CHEAP CANS CREATED A WHOLE NEW INDUSTRY FULL OF JOBS... INEXPENSIVE CANNED FOOD!"
"AND LOW-PRICED FOOD THAT WOULDN'T SPOIL, REVOLUTIONIZED THE GROCERY INDUSTRY AND CREATED MORE JOBS AS WELL!"
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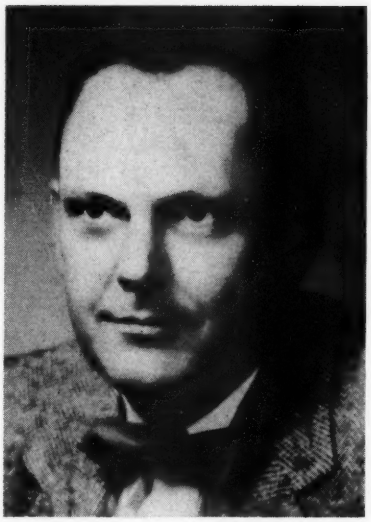

John H. Sutherlin

What's in the bag comes first but the packaging material can boost sales

A glamorous use for fertilizer bags is demonstrated by Catherine Bailey, '52 Ala. Maid of Cotton.

It's ON the Bag

By John H. Sutherlin

Sales Manager,
New Orleans Div.,
Chase Bag Co.

IT IS obvious that there is no one type of package which answers all the problems of fertilizer distribution. Burlap bags, multiwall bags, cotton bags and even bulk handling and spreaders all play an important part in transporting the commercial mixed fertilizers from mixing plants to dealers and to the ultimate consumer on the farm.

Use of cotton bags by fertilizer manufacturers in some areas of the country, mainly in the South, has been brought about by consumer demand. The farmer has found it economical to reuse the cotton fabric in the house or on the farm.

Many Advantages

The cotton bag, particularly the cotton sheeting bag, has found its place in the fertilizer industry also because the manufacturer himself has discovered that it stacks better, handles better and ships with less breakage. By the use of cotton bags, therefore, the fertilizer mixer can lower his handling costs and at the same time furnish more than 21 yards of high quality cloth for each ton of fertilizer purchased by the farmer.

Need for this cloth on the farm is illustrated by the many uses to which the farm wife puts the high quality material. Women's dresses, children's clothes, slip covers, curtains, men's shirts, draperies, aprons and table cloths are some of the many useful items which the farm wife can make attractively from either the high count dress print bags or the white sheeting bags. The farmer himself uses the white cotton bag for seed containers, wiping rags, seed bed covers, tobacco or cotton pick sheets and many other things.

Historically, fertilizer has been considered a commodity with which the manufacturer had no opportunity for unusual package design. Until a few years ago, manufacturers had not given much thought to the possibilities of merchandising their product by means of package form and design.

Introduction and growth of the

A strapless terrace dress, made from cotton print bags, is worn by Annie Laurie Rankin, daughter of Rep. John E. Rankin, of Miss.

SEWN VALVE TYPE

PASTED VALVE TYPE

OPEN MOUTH SEWN BOTTOM

OPEN MOUTH PASTED BOTTOM

Hammond Multi-Walls

Brilliant multi-color printing of your brands on Hammond Multi-Walls . . . combined with the uniform high quality of papers and materials used in their production, provide you with shipping containers second to none. Manufactured to exacting standards every step of the way, Hammond Multi-Walls are attractive and strong for safe, economical delivery of your products. Consult your Hammond man today.

For Multi-Wall bags, "make it a habit to depend on Hammond."

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cotton dress print bag and the plain white cotton sheeting bag have proved that the cotton bag offers an opportunity to the manufacturer to merchandise his product, and increase the "sale-ability" of his own brands in competition with other manufacturers.

Sound Economics

Growth in the cotton sheeting bag in either white or dress print has its basis in sound economics in addition to the many factors such as ease of handling and stacking and less breakage.

A comparison of the costs to the manufacturer and to the farmer of multiwall paper bags with cotton sheeting bags reveals why both the farmer and the manufacturer find it advantageous to use cotton bags. (Figures given are average costs during 1952 and any change in the cost of cotton bags would of course have a proportionate change in the cost of piece goods, consequently relative figures would remain fairly constant.)

Fertilizer manufacturers have established their cotton bag costs of the 1952–53 season at approximately $4.75 a ton to $5.25 a ton and their paper bags at approximately $2.00 a ton to $2.25 a ton with a charge differential of $2.75 a ton to $3.00 a ton to the farmer.

Obviously any market fluctuations on the under side of these figures for cotton bag costs are additional profit of which the fertilizer manufacturer can avail himself. Actually average costs for bags through 1952 were somewhat under the $4.75–$5.25 a ton figure although prices in the latter part of the year were approximately $4.75 a ton.

For each ton of fertilizer purchased in cotton bags the farm wife receives a little over 21 yards of cotton goods which has a normal retail price of 40 cents a yard (1952 average). Thus she receives a value of 21 yards at 40 cent a yard or $8.40 worth. Because she pays only $2.75 to $3.00 extra a ton for fertilizer in cotton bags she has effected a savings of $5.40 to $5.65 for *each* ton of fertilizer bought in cotton bags.

Cost Passed On

From the manufacturer's point of view, he has passed the entire additional cost of cotton bags to the consumer. Moreover, his cotton package has attracted the buyer to his product, his handling cost and breakage cost are down and he has received direct consumer advertising and good will without cost.

The same analysis holds true for a comparison of dress print cotton sheetings and other containers. Original cost of the dress prints is more, but because the dry goods store cost is equally higher, the same relative saving is made by the farm wife.

It is well to remember that it takes approximately 20 yards of goods to cover one sofa and about 24 yards for one set of drapes. A dress requires four to five yards each. The farm wife thus finds use for several hundred yards of goods annually without a surplus of bag materials.

It is apparent that the farm wife has no interest in which brand of fertilizer her husband buys when it is packaged in containers which have no re-use value and are destroyed after use. But when the farm store displays competing brands of fertilizer, some in attractive and useful cotton bags, the women enters the picture and the manufacturer has made use of an effective merchandising idea.

In connection with such merchandising appeal, the Textile Manufacturers Association in cooperation wich the National Cotton Council has prepared an attractive sewing booklet for use by the farm wife. The fertilizer manufacturer can have a small box printed on each of his cotton bags, offering a free pattern service.

This attractive Pattern Service booklet is mailed free of charge to farm wives who answer the offer printed in a small box on cotton bags.

Pattern Booklets

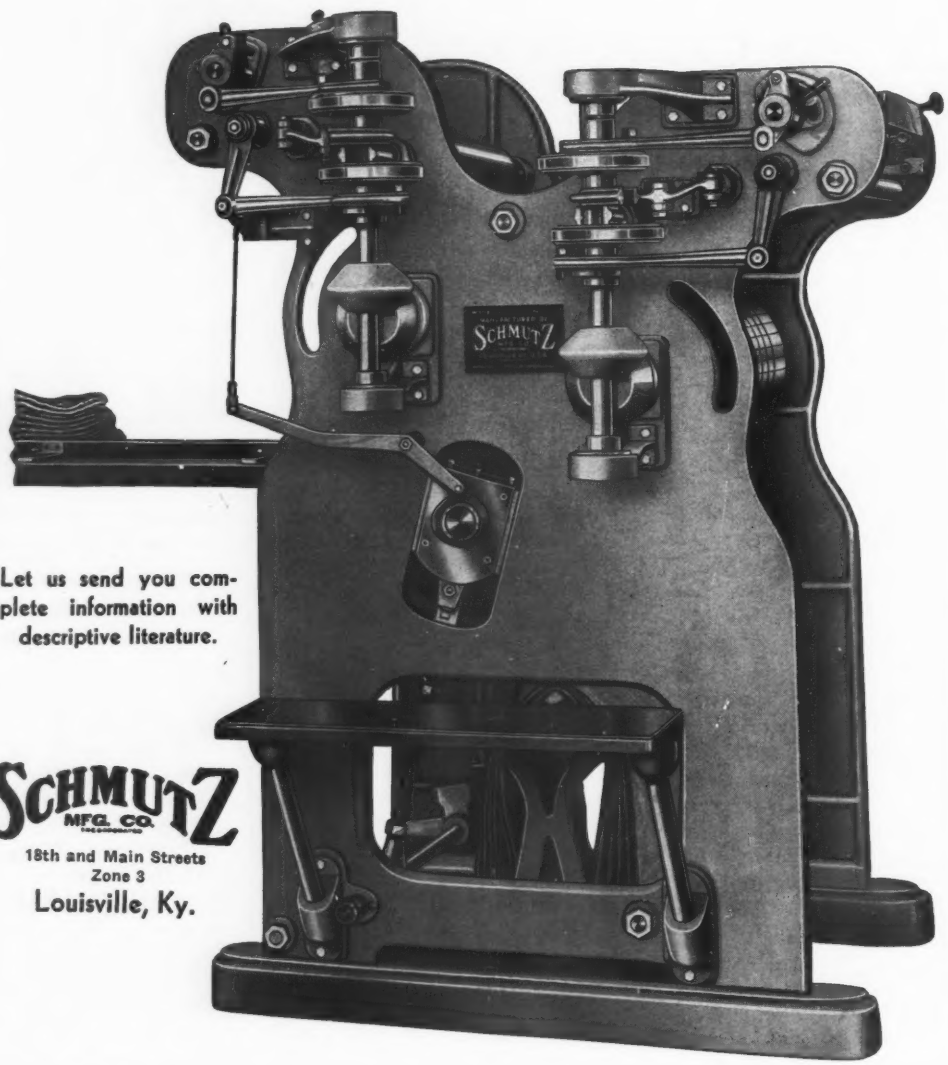
Thousands of booklets have been mailed to farm wives who have written for this booklet as a result of seeing this free offer on the brands they have bought. Naturally, the fertilizer manufacturer

Presenting

THE MOST MODERN BAG PRINTER

Manufactured in

One, Two, Three and Four Colors for printing made up bags of Paper, Cotton and Burlap, new or used.



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receives credit for making such an offer and gains valuable customer good will. Because there is no charge to the fertilizer manufacturer, he has received valuable free advertising.

Use of cotton fertilizer bags in southern states in the last few years has shown the popular packages to be mainly centered in the 36″ widths of cotton sheeting such as 3.60 yard and 3.80 yard with some limited use being made of denims and towelling and a 4.00 yard sheeting and 40″ 3.25 yard sheeting.

These sheetings have proved to be heavy enough to carry the weight while in bag form yet light and fine enough in weave and texture to make especially fine fabrics for clothes and household use.

From the standpoint of appearance, the two cotton goods constructions, 36″ 3.60 yard sheeting and 36″ 3.80 yard sheeting, the 3.80 yard is a somewhat finer piece of fabric with the cloth being woven of finer yarns and with a consequent higher count of yarns to the square inch. From the standpoint of strength and price, they are normally equal.

Latest Designs

Each of these two fabrics when finished into dress print materials are printed with the latest fashionable designs. Every lot of 1,000 bags which the manufacturer receives has an assortment of six or eight different patterns and colors. These dress prints are indistinguishable from those offered by dry goods counters in piece goods or cotton fabrics made up into dresses and offered by ready-to-wear stores. In fact they are superior to the run of the mill piece goods found at dry goods counters.

From the standpoint of the handling of cotton bags in the manufacturer's plant and on the dealer's floor, advantages of their use are the following:

1. **Ease of handling**—packing room men and warehousemen can handle the filled bag much easier and faster than an inflexible package such as paper, because cotton is a woven fabric.
2. **Ease of Stacking**—stacks of cotton bags stay put in the freight car, truck or on the dealer's floor. There is no costly shifting of loads as is often the case when paper bags are used.
3. **Less breakage** — small snags caused by plant equipment, while not desirable in any bag, will not cause a complete loss of the container, as when a paper bag is punctured. Total breakage from all causes is much less than paper bags.
4. **No special equipment** is needed to fill or close the cotton bag.
5. **Storage** of cotton bags is less costly than paper bags and they are not subject to drying out and deterioration as are paper bags.

Use of cotton bags in the South has been given impetus by the average small farmer whose purchases are not as great as the large plantations. As a general rule demand for cotton sheeting bags comes from the smaller farmer who buys his fertilizer in cotton bags for personal use of the bags.

The larger farmer, employing many hands or tenants is not interested in supplying them with clothes, curtains and chair covers. Consequently, promotion of the use of cotton bags and the merchandising of the package by the fertilizer manufacturer is directed to the many small fertilizer users, not the very large farmers.

Although most mixers have switched over to the use of cotton sheetings, there still is a large quantity of sturdy cotton osnaburgs used where the mixer has a distribution or storage problem

(Continued on page 51)

Are You Handling Bags Correctly?

EVER since the first patent for a bag making machine was granted back in 1852 to Francis Wolle of Bethlehem, manufacturers have been looking for (and finding) ways of improving packaging.

Bemis Bro. Bag Co., one of the largest manufacturers of multiwall paper bags, has summarized the latest technical advice on multiwalls in an interesting, easy-to-read booklet called the Bemis Multiwall Packaging Guide.

There's more to packaging than meets the eye of the consumer, as anyone connected with the packaging phase of a farm chemicals plant must know.

Such problems as storing, filling and closing, proper handling, palletizing and brand design constantly must be solved in order to assure efficient operation and a minimum of waste.

The Bemis guide covers all these facets and more. After a brief history of paper shipping sacks and a general statement about their use the booklet discusses, with illustrations, six means of maintaining proper humidity in the storage room—an essential for strong bags.

It advises against storing them in rooms where heat is excessive, under roofs which have a dry "attic heat" or in unvented rooms, unless proper humidity can be maintained under these circumstances.

The two general types of weighing devices, net and gross weighers, and the three general types of bag-filling equipment, gravity feed, auger packer and valve packer, are outlined along with a brief description of their method of operation.

The various means of closing the multiwalls are discussed next, with a general statement about the advantages of each method. The booklet goes on to give some basic rules to be observed in the preparation for car loading and the loading itself.

Other valuable pointers that should be understood by all the workers in your plant who are concerned with the packaging operation are the proper use of hand trucks, how to lift and carry multiwalls and how to repair them when they get damaged.

Advantages and applications of palletizing bags also are given, along with a description of the Bemis packaging service and sewing machine clinics for better education of bag users. To get a copy of the multiwall packaging guide, fill out a **Reader Service** card, using **Code Number 3-2.**

Machinery Group Plans Convention

Edwin H. Shmitz

PROGRESS in packaging during 1952 and plans for the future will be discussed next month when members of the Packaging Machinery Manufacturers Institute gather for their annual spring meeting.

New equipment, new types of seals and problems faced by manufacturers in packaging their materials will be aired when representatives of scores of packaging machinery manufacturing companies meet in Chicago, April 18 and 19.

The Sheraton Hotel is headquarters for the packaging institute.

Herbert H. Weber, president of H. G. Weber & Co., of Kiel, Wisc., is chairman of the program committee planning the convention, according to an announcement by Edwin H. Schmitz, Institute president.

Schmitz represents Standard-Knapp Division of Emhart Manufacturing Co., of Portland, Conn.

Others on the program committee are Mrs. Helen H. Fairbanks, president of Horix Manufacturing Co., Pittsburgh, Pa. and Edwin E. Messmer, vice president of Amsco Packaging Machinery, Long Island City, N. Y. ◆

Have Any Packaging Worries?

ARE your packaging techniques as dead as the cigar store Indian? If they are, you should plan to attend the 22nd National Packaging Conference and Exposition next month in Chicago. It's scheduled for the Navy Pier, April 20–23, and is sponsored by the American Management Association.

The Association said it expects nearly 25,000 business executives representing every state and 30 foreign countries to attend the four-day convention.

The program is part of Packaging Week.

Held in Navy Pier

Both wings of the Navy Pier will be utilized to house an anticipated 350 exhibitors of machinery, equipment, materials and services. Packaging executives and technicians alone probably will number approximately 1,500, the advance report on the meeting states.

At press time more than 300 exhibitors already had reserved space for exhibits.

The changes taking place in the packaging field will be highlighted at the convention. Scheduled to be discussed are faster and simpler machinery, new applications of materials and improved production methods.

Other Topics

Also up for consideration will be the problem of organizing and coordinating the packaging activity, testing consumer acceptance of new label design and new concepts for printing production.

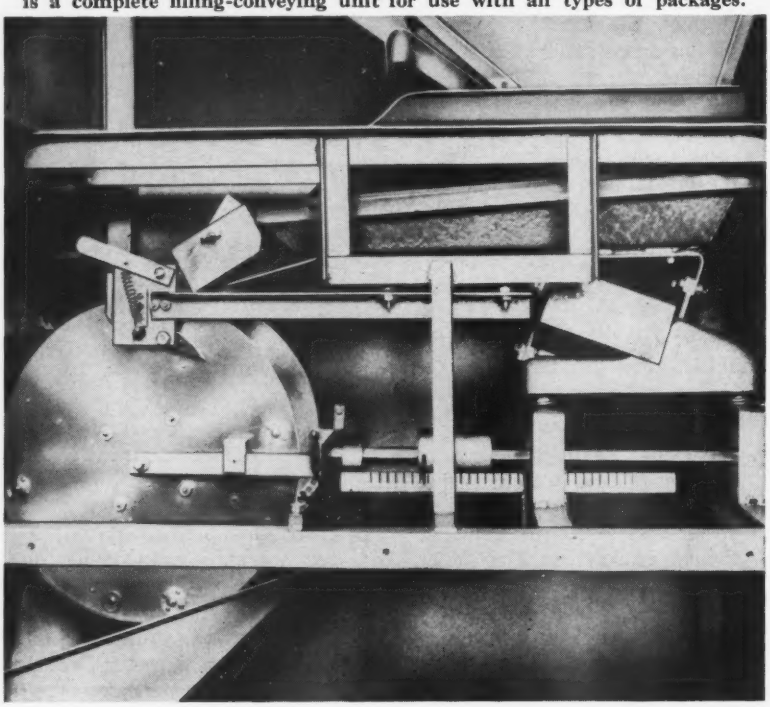
A panel session on getting maximum performance from filling equipment also is planned.

An innovation at the conference this year will be a "workshop exhibit" of materials useful to packaging management, which will be on display throughout the meeting.

The conference will be open to both members and non-members of the American Management Association.

The exposition time schedule will be extended an additional six hours to enable visitors to cover the show more extensively, the association reported.

One of many packaging machines to to be exhibited at the National Packaging Exposition will be this Frazier & Son net weighing machine. It is a complete filling-conveying unit for use with all types of packages.



FOR DEPENDABLE HEAVY-DUTY SHIPPING SACKS...

there is no substitute for kraft!

Kraft, manufactured from wood fibers, is the strongest paper known to industry. It was introduced in this country in 1909, just about the time when the first generation of Gilmans started manufacturing bags.

As pioneers, we have spanned the years with practical knowledge, technical skills, packaging experience . . . and our modern, completely integrated facilities are a notable example of kraft paper production and conversion.

Now in our 3rd generation of specialization, we are expert in pulp and paper making, in bag manufacturing, in bag printing, in bag designing.

Dependable as a Source . . .
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• The Gilmanized Corp.
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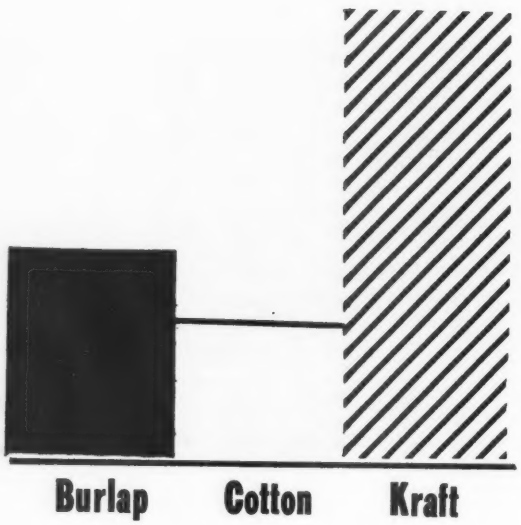
If your product fits into a bag—we'll make the bag to fit your product

Here's What Farm Chemicals Plant Us

Fertilizers—

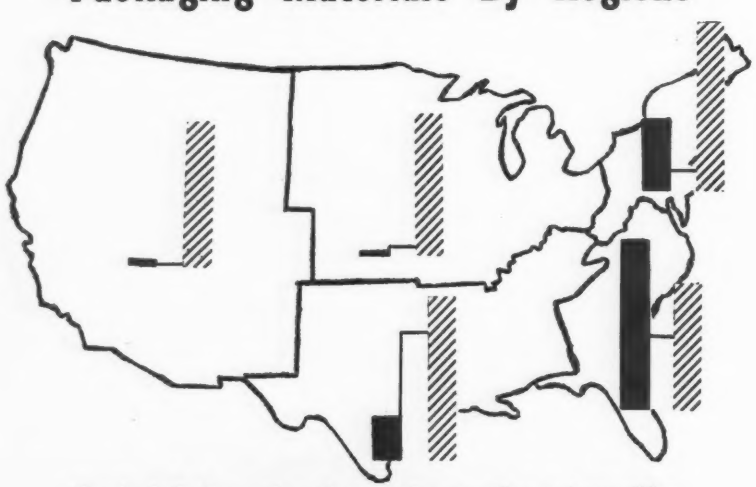
DATA from nearly 450 domestic fertilizer mixers indicate kraft, burlap and cotton bags are the most popular packaging materials. A FARM CHEMICALS survey shows companies in the Middle Atlantic, East North Central and Pacific states are specially big users of metal, glass and cardboard containers. This is probably indicative of interest in liquid fertilizers in those states and also the greater numbers of small package producers and mail order specialists in areas of considerable population (those offering a large home garden market).

Among the less important types are wooden barrels, plastic bags, metal envelopes, fibre drums and polyethylene lined containers. A number of companies have bulk distribution, some combining this with custom application services, an increasingly popular type of operation.



ONE-HUNDRED pound kraft bags are the most used fertilizer containers. Following closely are 80 lb. kraft, 200 lbs. burlap, 100 lb. cotton, 100 lb. burlap and 200 lb. cotton bags. The use of large (167 and 200 lb.) cotton and burlap bags continues on a fairly large scale in some sections.

Packaging Materials By Regions



ONLY mixers in the South Atlantic area indicated a preference for burlap bags, those in all other sections rated multiwall kraft bags as the most used units. Cotton bags are popular in several areas, especially where the "print bag" sales points can be used effectively with local customers.

Graphs indicate number of companies reporting, not quantities of packaging materials used.

...nt Use For Packaging Their Products:

Pesticides—

Kraft-lined

Kraft-unlined

Metal

Glass

Cartons

ALTHOUGH lined and unlined kraft bags are widely used for packaging dusts and wettable powders in the pesticide industry, the most popular packaging materials are metal, glass and cardboard according to a FARM CHEMICALS survey involving a considerable number of pesticide producers.

It must be stressed that the quantity of formulations produced was not considered in the survey; hence producers of a few small package items are considered equally with organizations turning out millions of pounds of cotton dusts each year.

ONE, five, 30 and 55 gal. cans and drums are the most common metal containers and one gallon jugs rank first among glass containers. Other materials now in use for pesticide packaging include fibre drums, wooden barrels, plastic bottles and bags, plywood drums and aerosol containers.

Glass jars and composite units (cardboard and metal) are used by some companies for wettable powders and dusts, especially in small package lines. Many companies are turning to lined kraft bags for the smaller units of dusts and wettable powders while retaining unlined multiwall bags for larger sizes.

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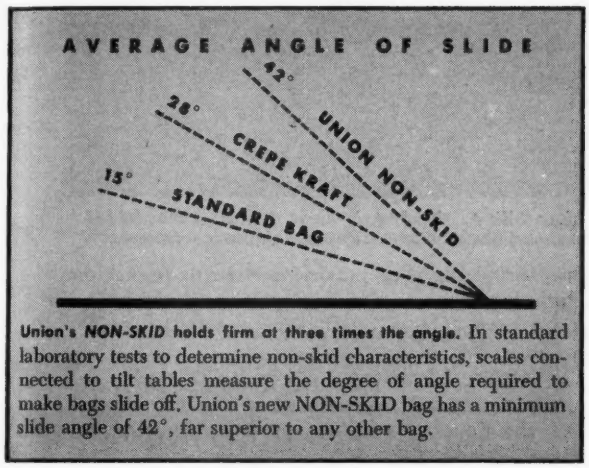
STACKING, PALLETIZING and
MATERIAL HANDLING
UNION'S
NON-
ECONOMICAL
The most economical bag with a built-in NON-SKID.
LESS REPROCESSING
Less breakage and spilling means less rehandling of product.
MORE PROTECTION
Curtails breakage due to bags falling from fork trucks and stacks.
TRADE MARK
UNION
NON-SKID
MULTIWALL BAG
PLEASES YOUR CUSTOMERS
Reduces likelihood of transit damage due to load shifts; cuts down complaints.
LABOR SAVINGS
Fewer man-hours needed to clean up contents of broken units; easier handling.
UNIFORM STACKING
No variation. Provides completely dependable stacking qualities.
MOVE FREELY
Manufactured to flow on chutes and conveyors.
WON'T ADHERE
Bags will not stick to each other in bundles.
ADAPTABLE
Special coating is controllable. Like all Multiwalls, it is custom-engineered for each use.
SHIP BETTER
Resist rough handling. Less tendency to slide and chafe in transit.
TRANSPARENT
Coating shows inks and stock to full advantage.
EASY TO SEW
Tops of bags may be kept free of coating.

N-SKID MULTIWALL BAGS

Sprayed-on coating reduces skidding effectively



Union's *NON-SKID* holds firm at three times the angle. In standard laboratory tests to determine non-skid characteristics, scales connected to tilt tables measure the degree of angle required to make bags slide off. Union's new NON-SKID bag has a minimum slide angle of 42°, far superior to any other bag.

Union's brand-new
NON-SKID Multiwall Bag
guarantees better performance at
every stage of your
packaging, storage and shipping operations
where skid control is essential.

Union's *NON-SKID* is a
performance-proved Multiwall
with the addition of
an exclusively developed resin-like emulsion.
Almost invisible to the eye,
this new spray makes this the first
all-way NON-SKID Multiwall.

This new bag delivers a far greater *non-skid* rating in every direction . . .
even greater than bags made of creped kraft.

Size — Stock — Delivery

Available in Union Multiwalls of all sizes with either
a kraft or bleached outer ply. Initial
capacity may be limited. Orders will receive priority
in order of receipt. Investigate now.

BEST APPLICATIONS

Union's *NON-SKID* is particularly recommended
for feed, chemicals, flour, synthetic rubber,
starch, fertilizer, insulating materials, and other
products in whose packaging material handling
is an important consideration.

DRIVER COULDN'T MAKE *NON-SKID* BAGS SLIP OFF!
In one plant test, a gasoline-powered truck was loaded with these bags. The driver was instructed to make them slip off.
He started forward at full speed, then applied brakes full force.
Although momentarily the truck itself threatened to tip over, the stack of NON-SKID Multiwalls resting on the forks merely leaned slightly, then settled back to their original position.

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& PAPER CORPORATION
Woolworth Building, New York 7, N. Y.

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Woolworth Bldg., N.Y.C. 7

We would like more information on the new Union NON-SKID Multiwall Bag.

Name_____ Title_____

Company_____

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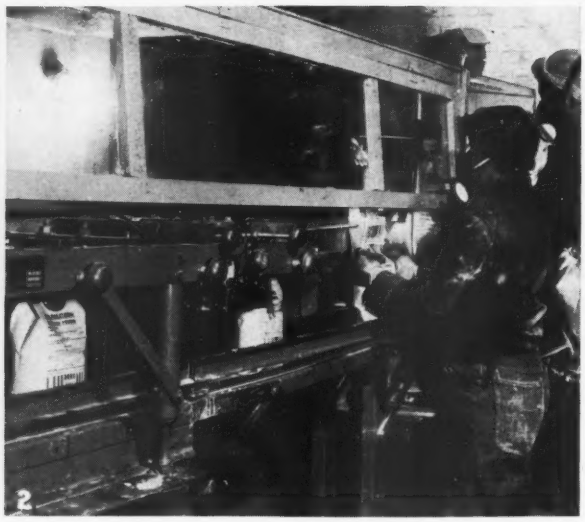
City_____ Zone____ State_____

FC353

Latest Trend in Packaging: Use of Polyethylene

1. At Miller Chemical & Fertilizer Co. plant, worker fills polyethylene lined bag with parathion.



2. After filling, the bag is heat sealed, then folded over and pasted down. Note use of gloves, respirators.

POLYETHYLENE lined or coated bags have many advantages that are making them more and more popular in the farm chemicals industry, especially among pesticide manufacturers.

Miller Chemical & Fertilizer Co., in Baltimore, Md., is one of many companies that have turned to the new material for small package pesticide and soluble fertilizer products.

Transfer of moisture is prevented with the polyethylene "heat seal" bags. That's their biggest single advantage, because this factor prevents caking of hygroscopic materials and enables delivery of a product in perfect physical condition.

There are other important features of the coatings. Toxicity problems with pesticides such as parathion are minimized because the dust can't escape from the sealed package. The material also is resistant to acids.

Other Advantages of the linings

Increased customer acceptance is another advantage of the linings, according to T. L. Smith, vice president of the Miller company.

He emphasized the fact that sealed products don't dust out so that a clean and neat package can be delivered to the dealer and to the customer.

Ease of printing and opening are other features. Gone are the broken finger nails that so often resulted from attempts to open stapled bags, as well as the

Sales Manager

Robert J. Stevens

New sales manager of the multiwall division of Chase Bag Co. is Robert J. Stevens. He joined Chase in 1945 and was sales manager of the Buffalo-New York branch of the company before being transferred in 1950 to the general sales department in Chicago.

George N. Burns, was transferred to New Orleans as regional sales manager of the multiwall division. He had been employed in the Chicago office before his promotion.

R. N. Conners Promoted By Chase Bag Company

Robert N. Conners, vice president and general sales manager of Chase Bag Co., has been named executive vice president of the company. Conners also is a member of the board of directors.

In another personnel move William N. Brock, assistant general sales manager was moved up to general sales manager.

Conners joined Northern Bag Co., a predecessor to Chase in 1922, following service in World War I, where he served as a captain and aide-de-camp to General Leonard Wood.

Brock joined the company in 1934 as a salesman in the Chicago and Western Michigan territories.

O'Hearn and Nelson Move Up at Union

B. J. O'Hearn has been named southwestern district manager for multiwall bag sales and E. T. Nelson has been appointed western district manager for multiwall bag sales in two promotions at Union Bag and Paper Corp.

O'Hearn, former multiwall sales representative, will have a territory including the states of Colorado, Utah, Wyoming, Kansas, Missouri, Illinois (southern), Arkansas, Louisiana, Texas and Oklahoma in the newly created position.

Lined Bags To Keep Product in Good Condition

3. Bags are packed for shipment after heat seal and pasted closure are completed. Contents can't escape.

4. At point of sale, Miller reports, attractive printing makes bags of pesticide materials easy to sell.

bag rips that frequently accompanied such efforts.

Miller is using the lined packages in one, four, five and 30 pound sizes. For packaging products destined for the farm or truck garden, regular 50 pound multi-ll valve pack bags are used.

Heat Seals Cheaper Than Staples

As they are closed in the Miller plant, Smith stated, the heat sealed bags are cheaper to use than the stapled type. After the heat sealing the top of the bag is turned down and spotted with glue to complete the seal.

Pesticide plants aren't the only users of the new material. Fertilizer manufacturers use them for high analysis mixes (such as 14–0–14), triple superphosphate and ammonium nitrate, according to Union Bag & Paper Corp., one of several manufacturers of the coated bags.

Delivered in Top Condition

Use of the bags assures delivery of material in top condition, according to the company. In the case of triple super the material keeps acids in the fertilizer from attacking the bag paper and keeps moisture out.

High hygroscopicity encountered with ammonium nitrate makes protection against moisture the principal advantage of using the coated bags. ◆

Hammond Places Stress on Printing

Greater emphasis on printing and improving brand designs on multiwall paper bags is the highlight of work being done at Hammond Bag & Paper Co.

Reporting its activities to FARM CHEMICALS for this packaging section, M. E. Greiner, vice president, stressed the improvements made in the printing department of the company.

"The old idea that bag printing serves only as a means of identification for the product and that 'most anything is good enough' has become obsolete," he declared.

Greiner said many of Hammond's customers are asking the assistance of the company's art department in improving and re-designing their brands.

Hammond has equipped its factories with modern moulding presses during the past year which enable them to make printing plates accurately for a perfect impression on the bag.

Another improvement will result from equipment being installed at the plants to insure quicker drying of the printed bags—thus preventing a transfer of ink from one bag to another.

For further details fill out a **Reader Service** card, using **Code Number 3-4.**

Albemarle Has Giant Press at New Plant

A paper machine that is just short of a football field in length is rolling out 250 tons of kraft paper daily for Albemarle Paper Manufacturing Co. at its new Roanoke Rapids, N. C. mill.

The company says the new plant has greatly increased its facilities for manufacturing multiwall paper bags. It is located near the company's printing and multiwall manufacturing machines in Richmond.

S. D. Fleet, vice president and sales manager of Albemarle, says the company's new Beloit paper machine is one of the finest machines of its kind in the world.

Worthington, McDuffie Upped at International

Two promotions at International Paper Co. were announced last month.

R. R. Worthington was named assistant sales manager of the Bagpak division while O. W. McDuffie was moved up to take Worthington's post as sales manager of the machinery and service department of the company.

Are Your Packaging Costs Too High?

Here are some tips from an expert on economics of packaging specialties.

By Walter L. Hardy
Foster D. Snell, Inc.

A GUIDING principle in my personal activity is a statement made by George Westinghouse. He claimed all ideas go through three phases:

First Phase: What the hell, man. You're crazy.

Second Phase: Well, it's OK, but it's impractical.

Third Phase: What are you talking about, we've always done it that way.

In spite of this principle, I would not be crazy enough to attempt, at this point, to tell you how to package your particular chemical specialties. Instead let me bring out certain basic facts and figures concerning packaging and its role in production and merchandising.

Why Package?

Why do we package? The best answer is economic necessity. Our modern industrial age demands the shipment of raw materials and finished products from producers to users. Each shipment demands a package—each package must be designed to contribute one or more of the following:

1. Sales appeal
2. Protection from deterioration
3. Protection from mechanical damage
4. Protection from pilferage

The first historical record of a package was Cleopatra wrapped in a rug for delivery to Caesar. As a packaged package I would say it rated tops on all counts.

Walter L. Hardy

As in many other scientific and industrial advancements war has been the greatest force in package development. One of the earliest references on packaging we have been able to find was that for a canned meat product used during Napoleon's Moscow campaign. Probably it was not successful.

First Packaging

We in America first attempted subsistence packaging during the Spanish-American War. Again it was a canned meat product with lead used in sealing the cans. It is recorded that we had more men hospitalized for dysentery and lead poisoning than for battle wounds.

The two World Wars brought the greatest impetus to this development. As we moved from farms to the cities, as guildmen and journeymen were replaced by centralized industries, the need for packaging far outpaced developments in the field.

In any study, one of the most important factors is economics. What are the economics of packaging? A recent survey of American industry by the Packaging Institute brought out the fact that in the chemical specialities industry as high as 92 per cent of the direct labor costs were for packaging labor.

Labor Costs High

Overall average for the industry is above 80 per cent. Where in your production facilities do you have a greater potential for economies in labor, materials and time? With the recent strides in industrial chemical technology, increased profits can best be derived from improved packaging materials and techniques.

Most of us today are caught in the economic press of rising raw material and labor costs and the law of diminishing returns. To relieve this pressure, we investigate formula changes and more efficient chemical processing equipment. How many of us have looked to our labor and time consuming packaging facilities?

Next, are we getting the chem-

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ical, mechanical and pilferage protection we are paying for? The first factor is too involved for each particular product to discuss here. Concerning the other factors, the following figures will be of interest: Freight loss and damage on American and Canadian railroads for 1951 was a little over 100 million dollars. In 1952, it probably exceeded 120 million dollars.

For the 1951 figure, 15 per cent was due to loss; 80 per cent to damage and 5 per cent to delay. Similar figures for American trucking facilities indicate an expected loss in 1952 of more than 40 million dollars. Thus American industry will pay a bill of approximately 200 million dollars for essentially bad packaging in domestic shipping. If we should consider export shipments, these figures become even more appalling. What are your losses in shipping? Have you ever checked? After all, you are paying the bill—it is part of your overall costs.

Aiding Thieves

While we are on shipping, let us consider other factors in your shipping container. Do you advertise expensive specialty items to the potential thief by means of container copy? Rail and motor freight losses caused by pilferage will be approximately four million dollars this year. Are your shipping containers properly marked as to source and destination? Improper marking will be the essential cause for a 20 million dollar loss.

Do you use intermediate printed display cartons? If you are using them, or before you do, check on your various distribution channels. For example, if your principal outlet is the retail druggist, approximately 80 per cent of these intermediate cartons may never reach him. You can spend much time and money in the design and use of these intermediates. Is it wisely spent?

Now for the individual or unit package. We will assume it is correctly designed for product protection and direct our attention to the second function of the package—that of sales appeal.

As an industry, are you doing your best in giving your package a sales appealing appearance? Let us look at the record.

There may be some of you who believe package appeal is unimportant — that your advertising campaigns will create your demand.

Many farm chemicals manufacturers may be surprised by the impact a good package can make on a customer, and the increased sales it can stimulate.

Walter L. Hardy, director of package engineering for Foster D. Snell, Inc., of New York City, consulting chemists, outlines the importance of good packaging principles.

FARM CHEMICALS **feels its readers will be interested in Hardy's article, taken from a talk before the Chemical Specialties Manufacturers Association, for two reasons:**

1. The basic principles of package design apply to the products being marketed by fertilizer and pesticide manufacturers.

2. More and more members of the industry are expanding into the field of specialty items; products that require an attractive package that will catch the customer's eye.

The author presents some valuable tips on both subjects.

Now for the record: in a recent survey made by the E. I. duPont company in 35 super markets covering 1,845 shoppers, it was found that only 33.4 per cent of the purchases were planned in advance and bought as to specific item and brand name. Shopper decisions were made in the store, totaled 66.6 per cent. Of this 66.6 per cent, 26.7 per cent were planned purchases as to item, unplanned as to brand. Substitutions of item and/or brand represented 1.5 per cent.

Most important is that 38.4 per cent of the purchases were completely unplanned at the time the purchaser entered the store. In other words, for every ten items the shopper purchased, four were decisions on item and brand and three were decisions on brand. At the point of decision, what influence do you have on the shopper other than package appeal?

The right package design potentially could increase your sales 66 per cent.

Packaging Studies

We at Foster D. Snell are engaged in studies on packaging and merchandising for several of our clients. While investigating certain marketing procedures we took some pictures in a large hardware store and two supermarkets in New York City.

The stores serve a lower-middle and middle income group and are above average in appearance and stock maintenance but the photographs showed that the average package had very little to attract attention.

Some other points were gained by looking at the pictures: rectangular containers are preferable to round containers for keeping the brand and product designation in view. Where lighting in a store was inferior not a single product was identifiable.

Another important point worthy of consideration by members of the farm chemicals industry who market specialty items is this: according to the American Optometric Association approximately 35 million women in this country wear glasses of which 40 per cent, or 14 million, refuse to wear them in public. Twenty million more should wear glasses but do not for one reason or another.

Many Factors

There are numerous important factors involved in the subject of packaging. I can only hope this starts readers thinking in terms of packaging to

1. reduce your costs through your greatest potential for savings in labor, time and materials and

2. increase your sales through your share of point of purchase decisions. ◆

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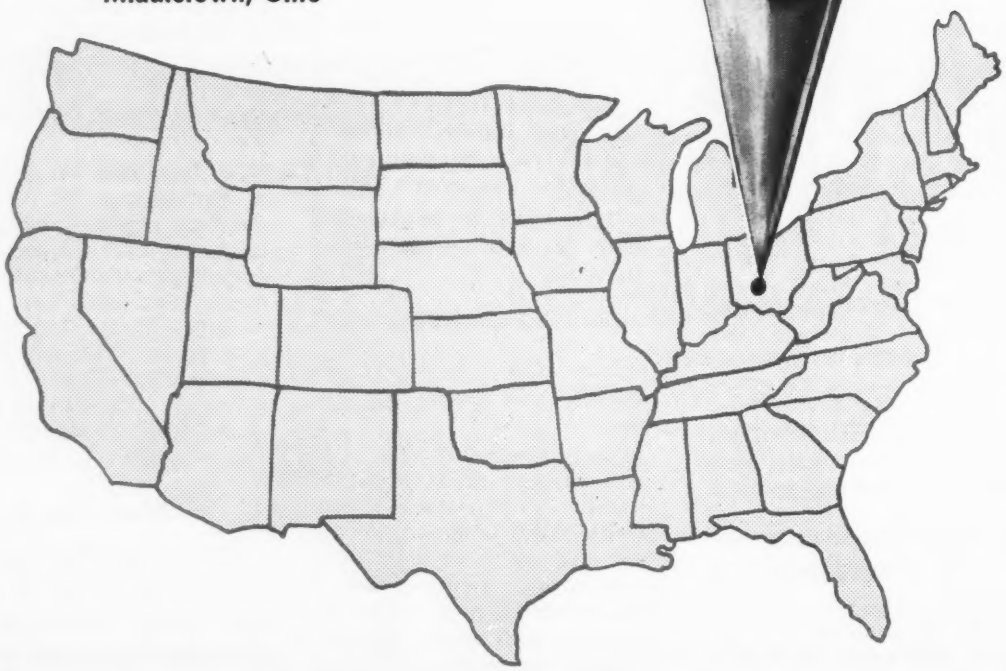


THE RAYMOND BAG COMPANY
MIDDLETOWN, OHIO

He Can't Make Them Skid

Try as he may, this driver just can't dislodge a stack of Union Bags. Reason: they've been treated with a substance making them skid-proof.

WHENa fork truck loaded wtih bags screeches to an unexpected halt in a farm chemicals plant, money and time are lost if the pile slips and bags break.

That's what often happened in the past but it doesn't need to happen any more, according to Union Bag and Paper Corp.

The reason is development by the company of a unique non-skid multiwall bag. This improvement in packaging is made possible by a special coating applied to the face and back of the bag during manufacture. The coating gives multiwalls extremely high skid resistance—with a minimum slide angle for coated bags of 42 degrees, according to scientific Union tests.

One of Union's customers tried a more dramatic test. A pile of bags was loaded on a fork truck. The driver was instructed to try to make them fall off. He started forward at full speed then applied the brakes full force.

For an instant, Union reports, it appeared that the truck would tip over but the stack of bags on the fork merely leaned forward slightly (as shown in photo), then settled back to its original position.

Amount of special coating is controllable, the company says, so any required non-skid characteristics can be built into the bag. For further information on the non-skid bags, fill out a **Reader Service** card, using **Code Number 3-3.**

Fulton Bag Will Build New Plant for Multiwalls

A new multiwall plant, first part of a big 1953 expansion program, is planned by Fulton Bag & Cotton Mills multiwall paper bag division.

The building, to be located in St. Louis, will be a one-story structure with 50,000 square feet of floor space, Clarence Elsas, president, announced last month.

It will be constructed entirely of non-combustible materials, equipped with sprinklers and lighted with fluorescent fixtures.

The unit is scheduled to go into operation by August.

Overnight deliveries for a distance of several hundred miles in all directions from St. Louis will be made possible by the plant, Elsas stated.

Hudson Describes Storage of Bags

NO MATTER how tough a multiwall bag is constructed and no matter how attractive the design and label of the bag it won't do the job it's supposed to if it has been stored improperly.

One of the most important factors in proper storage of multiwall sacks is humidity, according to an excellent folder on storage prepared by Hudson Pulp & Paper Corp.

Breakage, biggest headache in any packaging system, can occur on the packer, in handling or in shipping if the moisture content of the paper falls below six per cent, the folder states.

Ideal conditions for new bags require a relative humidity of 50 per cent at warm temperatures.

Hudson, in its literature, suggests that plants using multiwall sacks keep a humidity indicator in each storage room. If the humidity drops below 50 per cent the company recommends use of one of the following proved methods for maintaining humid air:

1. Store sacks on dunnage and keep floor wet as needed.
2. Drill needle holes in water pipes—hang cloths over the hoses so air will absorb moisture from them.
3. Use a commercial humidifier to maintain constant humidity.
4. Open storage room windows on damp and rainy days. Circulation will keep air at proper relative humidity.
5. Use water barrels to provide moisture. Fill to within three inches and hang cloths over edges in water.
6. Open steam valves and check humidity regularly.

To get a copy of Hudson's folder on proper humidification fill out a **Reader Service** card using **Code Number 3-1.**

Avery S. Hoyt

Lea S. Hitchner

Sen. Allen J. Ellender

March 11 - 13 . . .

NAC Convenes In New Orleans

MEMBERS of the National Agricultural Chemicals Association are scheduled to focus their attention on the terrific financial loss caused by insects, diseases and weeds—it amounts to $13 billion a year—when they meet in New Orleans March 11–13.

But there may be far more discussion, in private conversations, at least, about another matter of importance to the pesticide industry.

For by the time the convention delegates gather at New Or eans's picturesque Jung Hotel this month, several pieces of Federal legislation of vital interest to the industry will have been dropped into Congressional hoppers.

New Legislation

Hence, while association advisers and leaders from industry and government discuss the tremendous problem of controlling insects in order to raise crop yields, the general membership may be concentrating on the imminent subject of increased governmental control over activities of the industry—as far as chemical additives to foods are concerned.

The legislation, of course, is an outgrowth of the long and tortuous investigations of the Delaney committee (the Select Committee to Investigate the use of Chemicals in Foods and Cosmetics).

Congressman James J. Delaney (D.—N. Y.) already has submitted two bills to the House. In addition, Rep. A. L. Miller (R.—Neb.), another member of the Delaney committee, announced plans to submit three bills, covering separately pesticides, foods and cosmetics by the end of February.

According to the advance program for the annual spring convention of the NAC, talks by Avery S. Hoyt, Sen. A'len J. Ellender (D.—La.) and Joseph A. Noone will highlight the program.

Hoyt, chief of the Bureau of Entomology and Plant Quarantine, USDA, will present information on important economic insect problems in this country, together with the status of control operations.

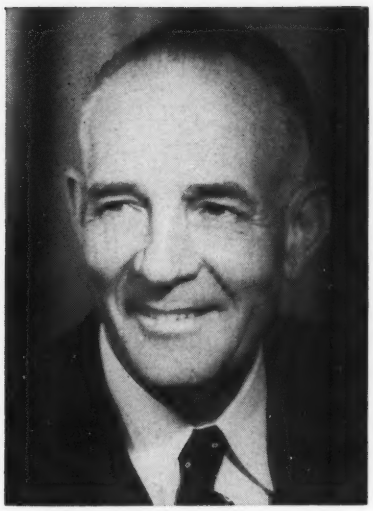
Sen. Ellender, a member of the standing committee of Agriculture and Forestry, is expected to fly to the convention from Washington, D. C. to discuss what farm chemicals have meant to southern agriculture.

Noone's discussion will center around pending legislation, both state and federal, of interest to pesticide manufacturers. Noone is technical adviser of NAC. His talk is expected to touch on the legislation growing out of the Delaney investigations.

Paul Mayfield, NAC vice president and manager of the Naval

Joseph A. Noone

Dr. Paul Mayfield



Arthur W. Mohr

Stores Dept. of Hercules Powder Co., will preside at the convention sessions.

A summary of conditions in the industry by Arthur W. Mohr, president of the association and head of California Spray-Chemical Corp., will open the Wednesday session.

Lea S. Hitchner, executive secretary of NAC, will follow with a report on activities of the association.

The subject of minor elements and nutritional sprays will be aired by the vice director of the Florida Experiment Station, Dr. A. F. Camp.

The financial aspect of transporting pesticide materials will be discussed by E. C. McClintic, vice president in charge of traffic for Pure Carbonic Co.

Herbicide Progress

"Recent Advances in Weed Control" is the topic scheduled for Dr. Warren C. Shaw, agronomist for the Division of Weed Investigations of the BEPQ.

A day of committee meetings and a program of recreation, including a golf tournament and climaxed by a banquet in the evening, is set for March 12.

On the final morning of the convention, in addition to Noone's talk, NAC members will hear talks on systemic insecticides, formulations, wood insects, the future of farm chemicals in the South, foreign pesticide developments and liability and safe use.

Speaking on systemics will be Dr. H. G. Johnston, head of the research and development of the National Cotton Council. James T. Conner, Jr., entomologist for Taylor Chemical Co. will follow with a speech on NAC and the formulator.

Wood Insects

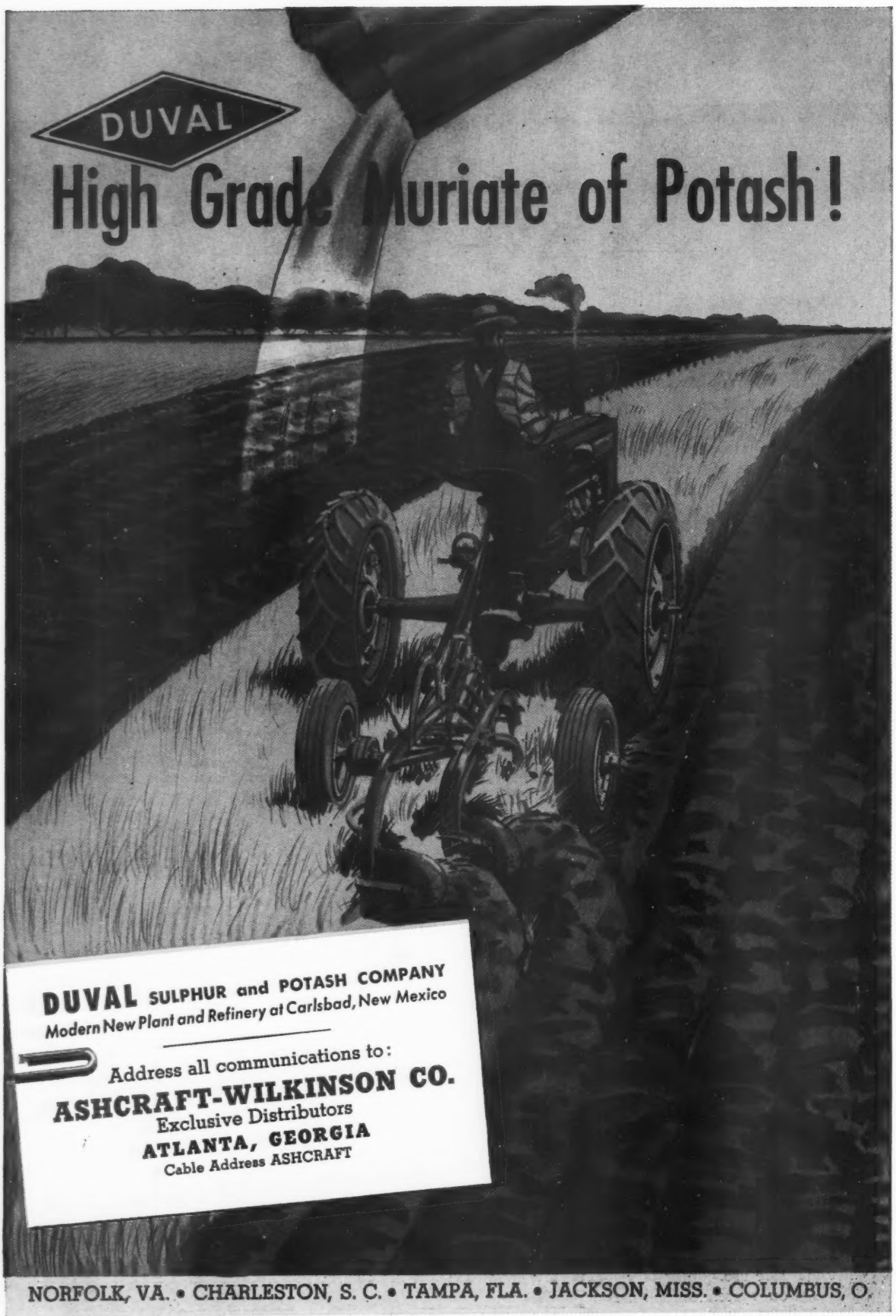
Latest information on wood insects will be presented by R. Joseph Kowal and H. R. Johnston, both USDA entomologists from Gulfport, Miss.

Kowal will confine his remarks to forest insects while Johnston will cover lumber insects.

The outlook for pesticides in the South will be given by Dr. Eugene Butler, vice president and editor of the Progressive Farmer. Dr. Charles E. Palm, head of the Department of Entomology at Cornell University, will report on foreign developments of importance to the industry.

The talk on liability and safe use, scheduled to bring the convention to a close, will be given by John D. Conner, counsel for the association. ◆

View of the Jung Hotel in New Orleans, where members of NAC association will gather for their annual spring convention March 11-13.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Fertilizer Salesmen:

Clinch the Sale With These Figures

By W. R. Allstetter
Vice President
The National Fertilizer Association

ALL the agricultural soothsayers tell us that farmers are heading into a cost-price squeeze. Farmers will, we are told, pay more for what they buy and receive less for what they sell. Therefore their profits will shrink. And don't forget a lot of farmers had troubles last year.

Quite a few of the crystal-ball gazers tell us that this means hard times for the fertilizer business. Some say serious hard times. Of course we all know anything that affects the farmers' economic well-being has an effect on what farmers do about fertilizers. If farmers are really hard hit they won't be able to buy fertilizer unless their bankers come to their rescue. If farmers are scared of all the gloomy talk they may be afraid to invest in fertilizers, or at least some of them will be.

Prices Determine Use

Historically farmers have cut their fertilizer purchases in times of declining agricultural prices—and fertilizer manufacturers and dealers have gone broke in times of declining agricultural prices.

Delivered at the Fertilizer and Lime Salesmen's conference at Pennsylvania State College, Jan. 27, 1953.

W. R. Allstetter

The most damaging thing a farmer can do is to cut his fertilizer usage. By so doing he produces a smaller volume of goods and makes less profit on each unit he does produce. Thus his profits collapse from two directions.

I doubt, however, if we have sold this idea and I would suggest that this sales job is the most important task facing us. It is important not only from the standpoint of our business, but also with regard to the welfare of our farmer customers.

You are all familiar with the economics of proper fertilizer usage but I think it might be helpful if we took one example and picked it to pieces. Table 1 shows what would happen to yields, costs and profits on a typical good corn field as proper fertilizer application goes up.

Fertilizer and Yields

Although this example was not taken from Pennsylvania, I understand from Dr. H. R. Albrecht, of Penn State, that it might well be typical of one of the better Pennsylvania soils. This chart presupposes that the farmer follows the recommendations of the college—good seed, close planting, lime where necessary, etc.

There are certain fixed costs involved in planting and harvesting an acre of corn, and they are higher than most people think. These are the costs which must be met regardless of the yield:

Land Use	**$8.00**
Taxes	**2.00**
Buildings	**3.00**
Power, Mach. & Equip.	**16.00**
Seed	**2.00**
Labor	**8.55**
Overhead—Other	**2.50**
Management	**2.95**
TOT. FIXED COSTS	**$45.00**

The first column in Table 1 shows the amount spent on the right kind of fertilizer. In the upper row nothing was spent on fertilizer and the total cost of production is $45.00, yield 45 bushels. Figuring corn at $1.50 a bushel, the net profit was $22.50. It cost the farmer $1.00 to produce a bushel of corn on this field.

You can see profits steadily mounted as fertilizer application went up. Also the unit cost of pro-

Table 1. Economic Effects of Fertilizer Usage in Corn Production

Fertilizer Cost Per Acre	Fixed Cost Per Acre	Total Cost Per Acre	Corn Yield Per Acre	Corn Market Price
$—	$45.00	$45.00	45	$1.50
5.00	45.00	50.00	55	1.50
10.00	45.00	55.00	65	1.50
20.00	45.00	65.00	80	1.50

Gross Return Per Acre	Net Profit Per Acre	Cost of Producing Bushel of Corn	Cost per Bushel for Extra Corn Prod. by Fertilizer
$67.50	$22.50	$1.00	—
82.50	32.50	.91	$.50
97.50	42.50	.85	.50
120.00	55.00	.81	.67

Table 2. Estimated Consumption and Supplies of Fertilizer Materials

	Estimated 1951-1952 Consumption	Estimated 1952-1953 Supplies	USDA Production Goal for 1954-1955
Nitrogen	1,425,000	1,585,000 (up 11%)	2,185,000 (up 38%)
Phosphate	2,235,000	2,465,000 (up 10%)	3,485,000 (up 41%)
Potash	1,585,000	1,850,000 (up 17%)	2,185,000 (up 17%)

duction declined. The farmer who put on $20 worth of fertilizer produced corn at 81 cents a bushel. This difference in cost could be critical when prices go off. The high-producing farmer grew more bushels of corn and made more money on every bushel.

Costs Get Lower

Now let's look at the last column. You can see the farmer could produce the first additional 10 bushels at a cost of 50 cents, the second 10 at 50 cents and the next 15 at 67 cents a bushel. This additional production would be the lowest cost production on the field. And it is this low-cost profitable production that the farmer will gain or lose by his decision on how much fertilizer he uses. I rather doubt if this story has been put over to most farmers.

Corn has been used here as an example, but the economics of high yields apply to nearly all crops, particularly grassland crops. This of course is of great importance to Pennsylvania whose farmers depend in large measure upon the sale of livestock products. The real basis for most profitable livestock farming operations is the production of low cost feeds on the farm.

Actually in a system of livestock farming the production cost of these extra crop units would be considerably less than shown here because something like one-half of the nutrients would be returned to the soil in the form of manure. A leading agricultural authority, Emil Truog, of the University of Wisconsin, has estimated the production cost of these extra bushels at less than 25 cents a bushel and, incidentally, of extra hay from properly fertilized fields at $2.50 a ton.

Step Up Yields

Let's look at it another way. If a farmer needs more feed for his livestock than he is now raising, he has three choices: He can buy more feed on the open market; he can acquire more land on which to grow feed or he can step up his production on the very acres already in cultivation. Which course is most profitable? The answer is perfectly clear.

Unless he already is producing at maximum economic yields—and very few farmers have reached this pinnacle—the most profitable course unquestionably is to step up his yields on his present acreage. I have Dr. Albrecht as an authority for this statement.

Let's consider corn a little further. Dr. Albrecht tells me some 20 million bushels of corn, as corn, were imported into the state of Pennsylvania last year, at a cost of $1.70 or $1.80 a bushel. This corn, or its equivalent in other feeds, could have been produced in the state on the very land that now is in cultivation, for at least $1 a bushel less than its purchase price.

To have done this would have meant an increased net income for Pennsylvania farmers of more than $20 million, or an average increase in net income of over $2.00 for every cultivated acre of every farm in the state.

Actually I would estimate the total feed imports in the state as quite a bit more than this. Maybe three times as much, and I think I am correct in saying that all of it could have been produced in Pennsylvania on the very land now in production at a fraction of its purchase price.

'Spectacular Story'

I doubt if there is anything quite like the economics of fertilizer usage in our whole economy. It is a spectacular story. To the extent we put it over we will sell more fertilizer and help not only ourselves but the Pennsylvania farmer and all those who deal with him directly or indirectly.

Stated another way, the best sales argument for using fertilizer is its dollars and cents return. When fertilizer is used efficiently the economic argument is most spectacular and persuasive. This is where the college people come in. Their job is to find the most efficient ways of using fertilizer and supply farmers and others with the information about its benefits.

It would be a great thing if we had for each of the major crops in Pennsylvania, a simple leaflet on the economic benefits of producing

high yields—one for corn, one for wheat, one for tobacco, one for grass, etc.

It seems to me that the agronomy department at Penn State is doing a great job with its resources, but it can't do all the things that it would like to do and should do, or what we would like to see it do, without adequate resources. It is certainly to our interest to support it in every possible way in its efforts to get the facilities to do the job. As time goes on the fertilizer industry will become more and more dependent upon the activities of the agronomy department. We ought to keep that in mind at all times.

Creating Desire

We have been talking here about how to create the desire on the part of the farmer to use fertilizers. Let us assume for the moment we can create this desire and see what other obstacles there are. For instance, will his landlord go along?

The economic sales argument will, I believe, be even more persuasive to the landlord than to the farmer himself because the landlord's interest is primarily an economic one. He is a fellow we want to keep after all the time and a good time for us to concentrate on him is in the off season.

Many of you have seen Lloyd Dumenil's article on "How to Convince a Landlord," published in the January 1953 *Farm Journal*. We have circulated reprints widely and it might be helpful in your sales work.

Suppose a farmer—either tenant or owner—has the desire and doesn't have the money. That is where the banker comes in. The banker wants to be shown in dollars and cents terms. He has to have it that way because he is dealing with other people's money. Here in Pennsylvania I believe we have a great opportunity to work with bankers.

Carl Dellmuth, the very able executive secretary of the Pennsylvania Bankers Association, naturally is interested in the subject of raising farmers' income. I understand he is publishing an article by Dr. Albrecht in the current *Pennsylvania Banker*, official publication of the association.

I am sure you will want to get a copy of this article and that you will want to discuss it with the bankers in your area. I understand the article stresses the economic side of fertilizer usage and urges soil tests as one means of insuring sound loans to farmers.

You perhaps know that the National Fertilizer Association has been working with bankers for some time now. We are preparing a brochure on fertilizers for banker use. Within a few weeks this publication will be distributed to every banker in the United States. It will, I believe, provide you with another opportunity for talking over fertilizers with the local banker.

We are in the process of sending to every banker in Pennsylvania a copy of the most recent issue of our magazine, the *National Fertilizer Review*, and inserting a card by which they can ask to be put on the mailing list to receive future issues.

Free Samples

On occasion I have encountered bankers who in the interest of the wealth of their community have become aggressive advocates of liberal and proper fertilizer usage. Last summer I met two bankers who are actually giving out free samples of fertilizer to their farmer-borrowers with instructions on how to put out test plots on their own farms. Needless to say, fertilizer usage was booming in their communities.

So much for economics and sales. I hope I have not given the impression that the National Fertilizer Association is advocating fertilizers as the complete solution to all the farmers' needs. We all know that a rounded program on the farm is the way to increase wealth.

We as fertilizer salesmen will benefit our customers and ourselves by selling a package deal of the essential practices recommended by the college. Fertilizer may be the keystone to profitable farming but it can't do the job alone and we hurt our case when we forget the other necessary farm practices.

Finally, as you can see from Table 2, we are going to have to sell a lot of fertilizer to keep up with supplies. It is a real challenge —and a real opportunity. ◆

Agricultural Group Lists 18 Questions

Answers to 18 broad questions in the field of agriculture and the chemicals that serve it will be sought in a vigorous long range research program recommended by the Agricultural Research Policy Committee which met in Washington late last month.

Among the questions listed by the committee, which advises the secretary of agriculture on research and marketing work, are the following:

1. How can we reverse the downward trend in the fertility of our soils?

2. Can we discover basic principles of life and growth and thus improve our plant and animal resources for human use?

3. How can we improve the nutrition of plants, animals and humans by better use of soil resources, fertilizers and feeds?

4. How can we eradicate or minimize losses from recurring epidemics of animal, crop and forest diseases?

5. How can we prevent the waste caused by destructive insects?

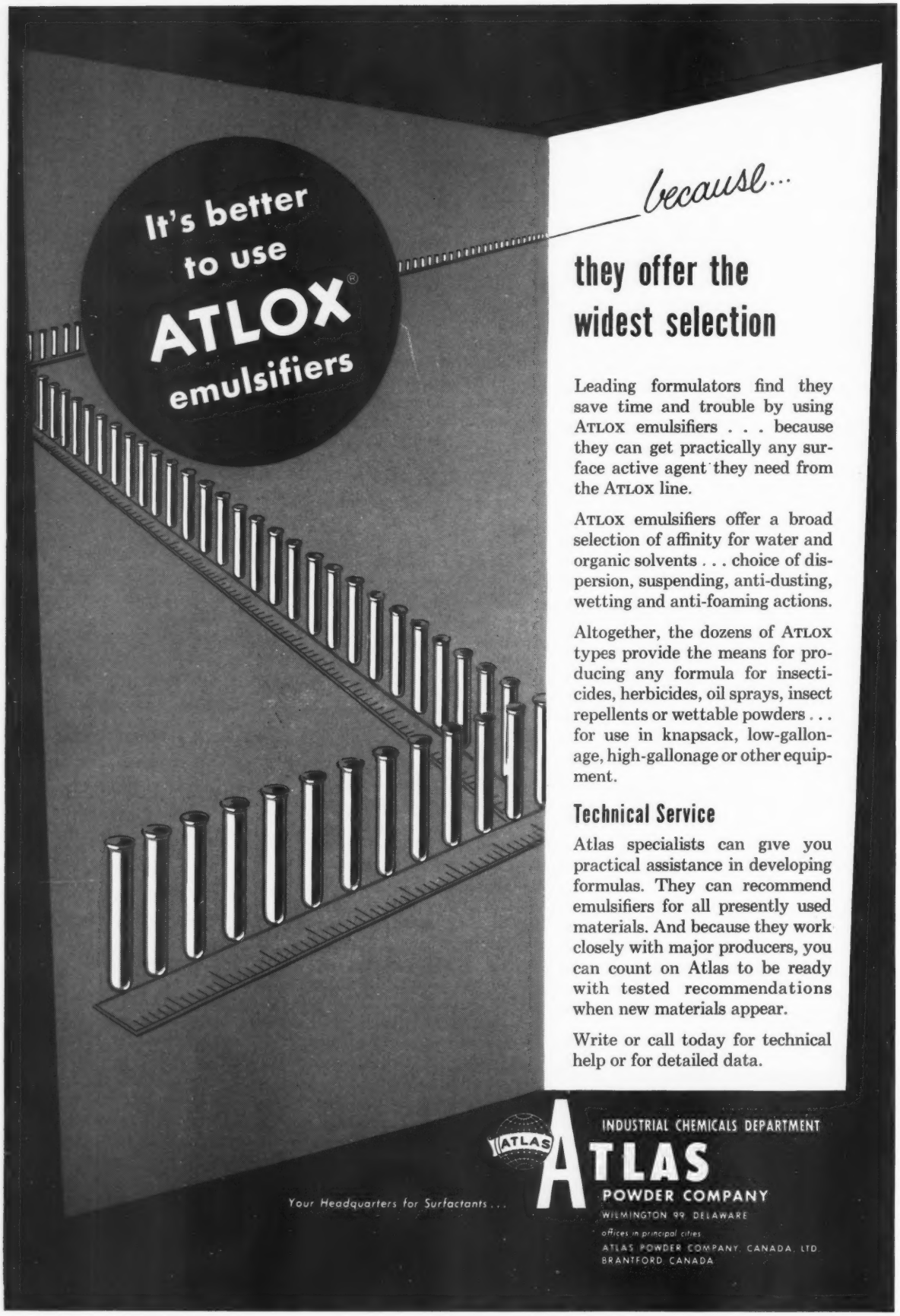
Research Group Seeks Tests on Pesticides

Expanded work on the effect of pesticides and herbicides and their residues on soils, animals, crop yields and quality was urged last month by the Vegetable Research Advisory Committee, which met in Washington, D. C. with the USDA.

The group urged that the cost of various research projects be viewed as "a long term investment."

It went on record as agreeing with Secretary of Agriculture Ezra T. Benson that "The most important method of promoting the long-term welfare of farm people and the nation is in the support of adequate programs of research and education in the production, processing, marketing and utilization of farm products and in problems of rural living."

The committee also said there is a need for more work on the effect of farm chemicals on flavor and other food qualities.



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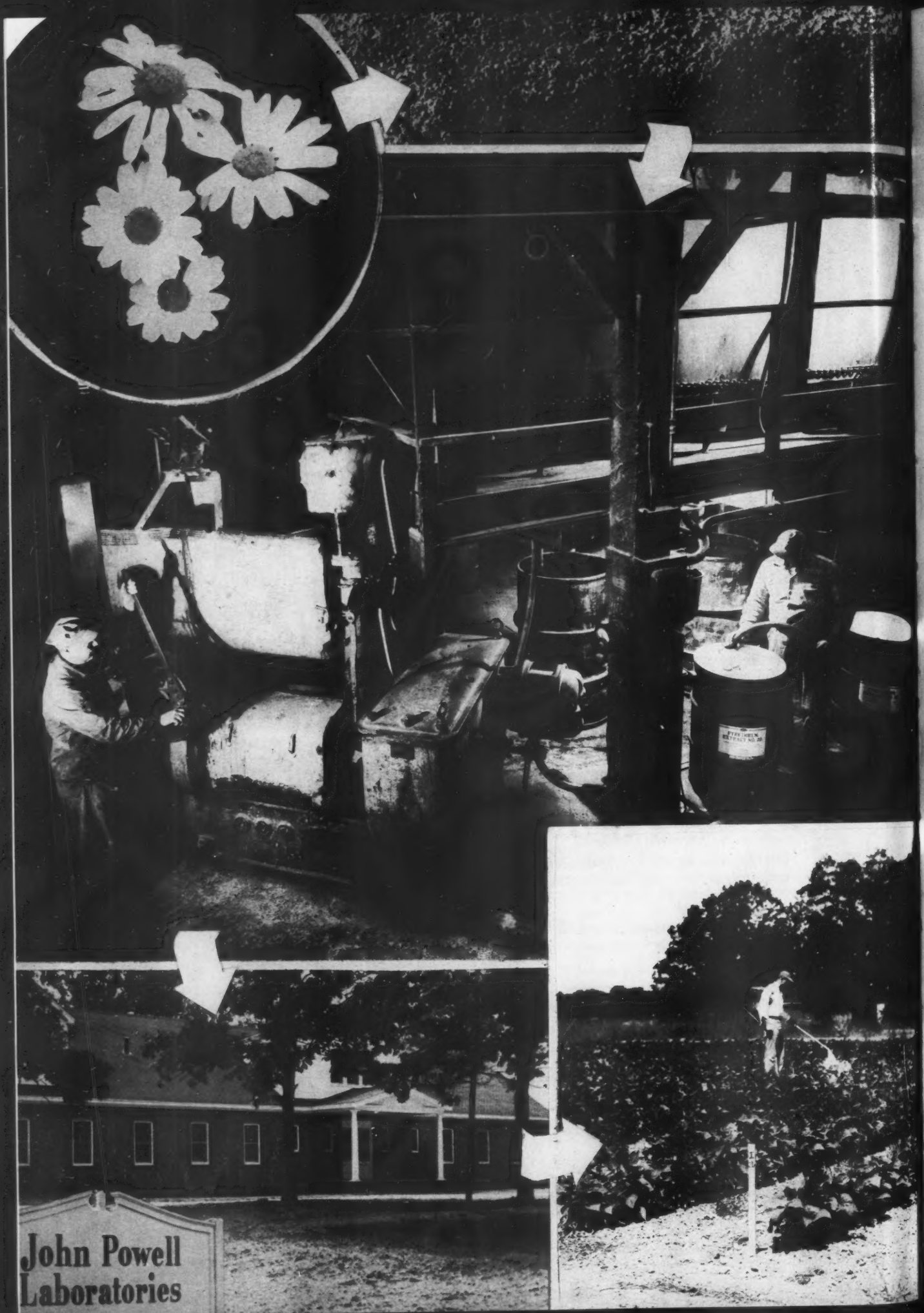
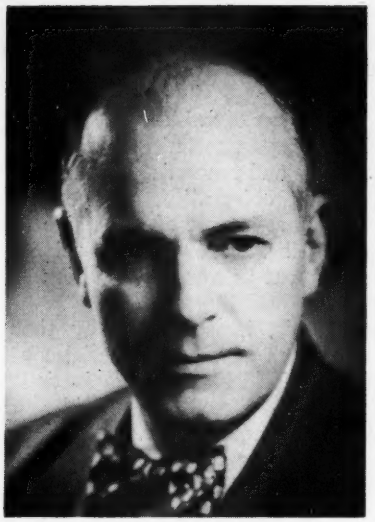

John Powell
Laboratories



Dr. Alfred Weed
V.P. & Secretary

H. Alvin Smith
President

William Pollert
V.P.–Exports

John Powell & Co., Inc.:

They've Got Everything

By Hamilton C. Carson
Managing Editor

JOHN POWELL has everything in the pesticide line.

That's not just a sweeping statement. You have only to scan the company's list of products to see that its line of basic materials for insecticides, herbicides and rodenticides is complete.

The reason is simple: When it was founded 30 years ago, John Powell & Co., Inc. made a decision, to which it has clung through the years, to deal exclusively in pesticides and their basic ingredients.

They Make Pesticides Only

Today, because it confined its energies to the advancement and development of insecticides, herbicides and rodenticides, it has emerged as a world leader in its chosen field.

To quote Powell's president, H. Alvin Smith, "We are the only specialists in the world in pesticides in which every segment of the business is devoted to insecticides and related materials, and nothing else."

The company started 30 years ago with importation and distribution of botanicals—mainly pyrethrum—but it has been adding to its line ever since.

Today it includes, in addition to pyrethrum and rotenone, DDT insecticides, benzene hexachloride, lindane, toxaphene, chlordane, parathion, TEPP, several organic weed killers and the rodenticide ANTU.

The company primarily is a basic manufacturer of many of the materials which go into almost any pesticide product you could name. Powell sells technical materials and insecticide and herbicidal concentrates to formulators who make the final products.

An important exception to this policy is that Powell will formulate finished pesticides if customers specifically request them under their label.

Two-Point Merchandising Policy

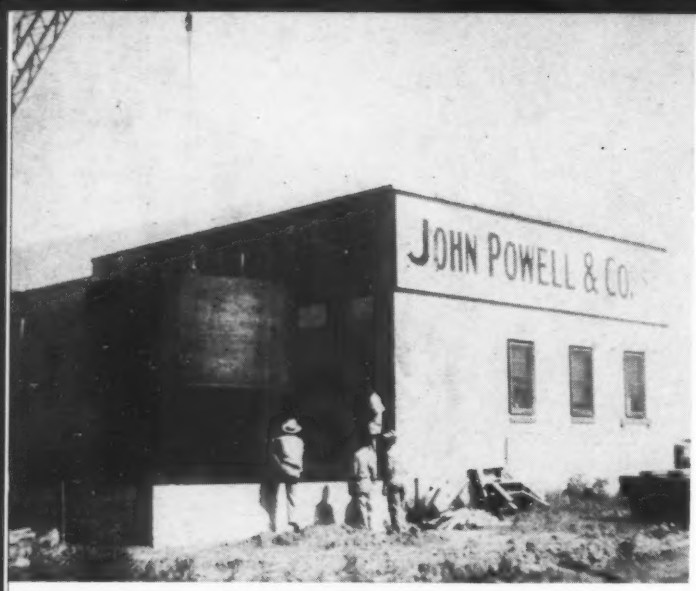
But Powell doesn't just supply physical materials to its customers. The company's two-point merchandising policy insures something more.

First, of course, John Powell specializes in the sale of basic materials to other manufacturers.

In addition, Smith stated, the company realizes

From Flowers to Pesticides

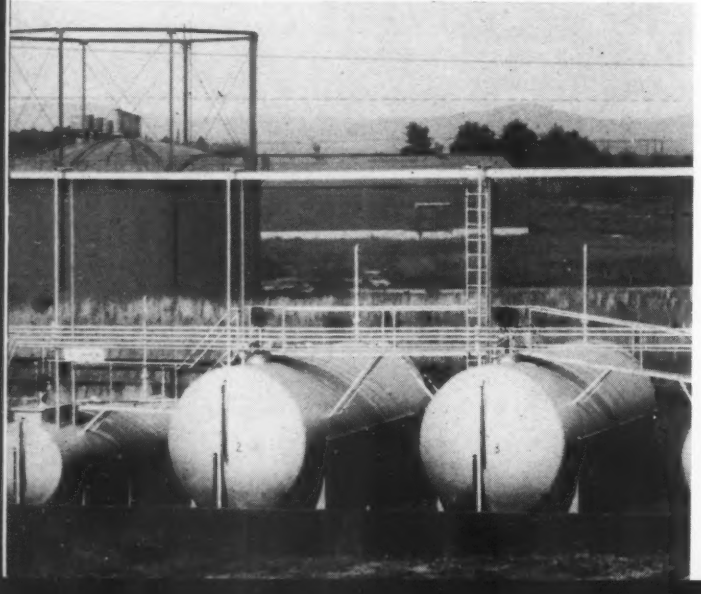
FROM PYRETHRUM TO INSECTICIDES: That's the story the photos on the opposite page tell. First is a picture of pyrethrum flowers, gathered in Africa. Next, ground flowers, ready for use in John Powell plant. Workers make Pyrethrum Extract No. 20 in center photo. The pesticide is tested in company laboratory (next photo), and applied to test crops in rear of building (final photo).



One of the many plants operated by John Powell & Co., to produce a complete line of materials for making pesticides.

Interior view of the Port Jefferson, N. Y. laboratories of the company which are used to test new pesticide materials.

Part of the "tank farm" operated by Powell at its Huntsville, Ala. unit. Other units in Georgia, Maryland, Nebraska.



that "this is an industry governed by complex federal, state and local regulations, whose important developments often are buried in abstruse scientific publications.

"The average manufacturer of finished insecticides, therefore, urgently needs expert technical advice and assistance—not of a vague and generalized nature but focused on his immediate problems."

To make this technical assistance of real value to the manufacturer, Powell in 1949 established its technical service department as a service division of the sales department.

In connection with this, it is noteworthy that Powell was one of the first to produce material conforming with W. H. O. (World Health Organization) specifications—which are exceedingly rigid in regard to diversity of uses under differing conditions encountered all over the world.

It is common practice in the department, and among the company's well-trained sales representatives, to give merchandising and technical help with labels, manufacturing and formulating problems as well as recommendations for the use of insecticides that arise so frequently in this complex industry.

Company Doesn't Formulate

Because it never packages its own specific formulations, and because of its role as supplier and technical adviser only, Powell constantly advertises to formulators that they can "benefit by doing business with the one leading manufacturer who does not compete with you."

It was pyrethrum that got the company started back in 1923. That was the heyday of the arsenicals and the fly swatter, with little attention given to such botanical insecticide materials as pyrethrum, but John Powell and G. R. Rinke founded their company with that as the cornerstone.

However, the company continually looks forward, and when the synthetic, allethrin, was developed and threatened to supplant the basic pyrethrum, it readily adopted allethrin as a new basic material. Complete studies were made and its advantages and disadvantanges were thoroughly catalogued. Today Powell knows as much about allethrin as it does about its basic pyrethrin.

Powell is credited with a number of firsts in the pyrethrum industry: it was the first company to manufacture and sell standardized liquid concentrates; first to concentrate on extending the use of the insecticidal material in agriculture and the first to develop a suitable synergist for the botanical.

Proud of Their Labs

Perhaps the most important part of the John Powell & Co., Inc. setup are the biological laboratories at Port Jefferson, Long Island where all products of the company are tested under the most rigid conditions. Temperature and humidity are controlled automatically to assure standard conditions in the lab.

"Powell's biological labs are among the finest in the country and probably are the only ones exclusively devoted to the insecticide industry," Smith asserted.

Included in the labs are a unique "Fly Farm" and novel "Roach Ranch" where unsuspecting bugs are

How You Can Get

Free Information

On each of the two postage-paid postcards below you can request further information on four items described on this and the Industrial News section of this issue. ***Fill out one quarter section for each item in which you are interested.***

3-6 Ryania

"Ryania, a Botanical Insecticide" is the title of a booklet issued recently by S. B. Penick & Co. It describes the company's insecticide material, giving information on toxicology, chemistry and physiological effects. The product is especially effective against corn borer, sugar cane borer and cranberry fruit worm, it states. **Code Number 3-6.**

3-7 New Bemis Comic Book

"A Better Life for You" is described in a new educational comic book which indicates that productivity is the key to America's prosperity. It is the fifth in a series of booklets issued by Bemis Bro. Bag Co. in the interest of better economic education in this country. It was produced in cooperation with Harvey Publications, Inc. Further information, including sample comic books and price lists, is available. **Code Number 3-7.**

3-8 Atlas Booklet

Helpful information on new and old uses for Atlas Powder Co.'s chemical products is available in a new periodical from the company called "Chemmunique." It will be issued bi-monthly. The chemical information is presented in non-technical language and the booklet is illustrated with color cartoons. To receive "Chemmunique" regularly, use **Code Number 3-8.**

3-9 Soil Conditioner Film

Use and function of synthetic chemical soil conditioners is pictured in a new film produced by Monsanto Chemical Co. The film is called "Garden-Wise" and is a sequel to the company's earlier picture on soil structure. Information on how to obtain prints of the film is available. **Code Number 3-9.**

3-10 Bristol Products

A complete list of equipment and control instruments manufactured by

Here is a list of the NEW PRODUCTS and BULLETINS described on this and the Industrial News pages of this issue giving their monthly code number.

- **3-1 Humidification Folder**
- **3-2 Multiwall Packaging Booklet**
- **3-3 Non-Skid Bags**
- **3-4 Hammond Bags**
- **3-5 Safety Film**
- **3-6 Ryania**
- **3-7 New Bemis Comic Book**
- **3-8 Atlas Booklet**
- **3-9 Soil Conditioner Film**
- **3-10 Bristol Products**
- **3-11 Fertilizer Equipment**
- **3-12 Carbowax Glycols**
- **3-13 Emcol H-82**
- **3-14 Interfloor Handling**
- **3-15 Screw Conveyors**
- **3-16 Diamond Products**
- **3-17 Eston Pesticides**
- **3-18 Pesticide Plant Respirators**
- **3-19 Spencer Solutions**
- **3-20 Aldrin with Fertilizer**

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the organization is available from Bristol Co. By referring to the list, users can send for bulletins giving additional information on any product produced by Bristol. **Code Number 3-10.**

3-11 Fertilizer Equipment

Systems and equipment for the fertilizer industry, and for the fertilizer industry only, are manufactured by the Fertilizer Engineering & Equipment Co. Information on their acidulating, batch weighing, mixing and ammoniating, granulating, elevating and conveying and bagging systems is presented in a company folder. Dimensions, capacities and prices also are provided. **Code Number 3-11.**

3-12 Carbowax Glycols

The farm chemicals industry has a big use for Carbowax Polyethylene Glycols, according to a new book available from Carbide and Carbon Chemicals Co. It describes, with the aid of many formulae, the uses of the water-soluble liquid and solid glycols. Complete data on the materials are included. **Code Number 3-12.**

3-13 Emcol H-82

Recommended for toxaphenene and chlordane is Emulsol Corp.'s new emulsifier Emcol H-82. The emulsifier is described in a new booklet released by the company. It is recommended for the two pesticides at low use levels for broader range of natural waters to give better emulsions. For technical data and samples, use **Code Number 3-13.**

3-14 Interfloor Handling

Reprints of an article describing the advantages of the Gifford-Wood interfloor-conveyor system which cuts receiving-to-storage time are available from the company. The article gives details of an installation which cuts the time 66 per cent, according to the company. The conveyor system can be adapted to the handling of virtually any material. **Code Number 3-14.**

3-15 Screw Conveyors

The screw conveyor may be one of the oldest means of moving materials from one place to another, but it still has a place in modern industry. A booklet from Link-Belt Co., describing its line of screw conveyors and screw feeders tells the advantages of the equipment and how it can be applied in your plant. Full engineering data are included, along with installation photographs. **Code Number 3-15.**

3-16 Diamond Products

Dependability is one of the many features of dealing with Diamond Alkali Co., if you are in the market for pesticide or herbicide materials. They are prepared to supply DDT, lindane, BHC, as well as 2,4-D and 2,4,5-T to formulators of farm chemicals. In addition the company has a technical consulting service to help you solve your special problem. **Code Number 3-16.**

3-17 Eston Pesticides

Long a supplier of potash and other raw materials to the farm chemicals industry, American Potash & Chemical Corp. now has expanded its line to include the Eston brand of fumigants, herbicides, defoliants and insecticides. Information on these new products handled by the company is available. **Code Number 3-17.**

3-18 Pesticide Plant Respirators

The workers in your pesticide plant may need respirators for complete protection. If so, Willson Products, Inc. thinks you would be wise to consider their equipment. Why? Because it is designed specifically for use with insecticides such as parathion, aldrin, toxaphene and others. Literature and an agricultural safety poster are available. **Code Number 3-18.**

3-19 Spencer Solutions

There are plenty of good reasons why Spencer Chemical Company's nitrogen solutions are favorite ammoniating solutions from coast-to-coast, according to the company. The company's Spensol solutions are described in technical literature from Spencer. An added feature at Spencer is the technical service provided free to members of the industry. **Code Number 3-19.**

3-20 Aldrin with Fertilizer

You can mix Shell's aldrin with fertilizer and sell it for simultaneous application, the company reports in a bulletin describing its pesticide material. Or, it states, you can sell the aldrin formulation alone, for application as a dust or spray, directly on the ground before planting. The bulletin gives technical data on aldrin. **Code Number 3-20.**

Reader Service inquiries will be honored up to six months after date of publication of the magazine in which they appear.

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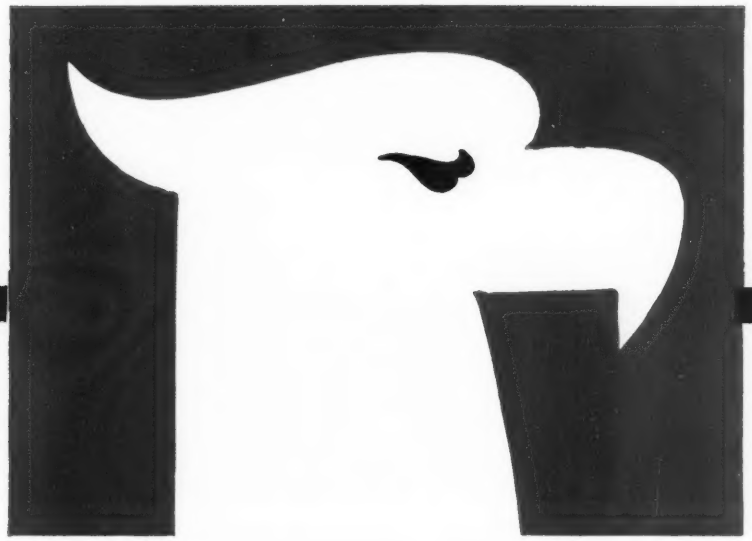

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The big port facilities owned by John Powell Co. in New York enable the company to handle its imports of raw materials and exports of insecticide materials quickly and efficiently. Company uses area outlined in photo.

subjected to all the latest pesticidal materials.

The company claims "Powco Brand" quality is recognized the world over as conforming with the most exacting standards of any locality, region or country.

Present executive leadership at Powell is vigorously behind this development program.

Smith Well Qualified

Smith joined the company in 1942 and worked closely with government agencies during the war in the procurement of insecticides. World-wide travel went with those duties. That helped immeasurably to provide a well-rounded background for his move up to the position of president and treasurer of the firm in 1949.

Smith succeeded Powell, who sold his interests to go into trade journalism.

In the personnel changes, Dr. Alfred Weed became vice-president and secretary and William Pollert was elected vice-president in charge of all export and overseas operations (which at Powell, is a big part of the business).

Dr. Weed had served with the company 20 years before being named vice-president. Pollert joined the company a year after Dr. Weed.

Other top personnel in the Powell organization include Frank Rush, assistant treasurer; Harold L. Straube, operations manager; Dr. Ralph Tracy, technical director; John Stoddard, domestic sales manager and Philip Mueller, acting export sales manager.

Affiliate in Alabama

The steady expansion of the organization, both physically and in personnel, necessitated an increase in production facilities.

One such move was organization of an affiliate, John Powell Chemical Co., in Huntsville, Ala., to handle the manufacturing, with plants located there and in Atlanta, Ga., Elkton, Md., Brooklyn, N. Y., and Omaha, Neb.

Latest expansion move was recent formation of John Powell S.A., Commercio Industria in Brazil. The unit was organized in partnership with U. S. Industrial Chemicals, Division of National Distillers and local Brazilian interests, with Powell policies governing, to promote the manufacture of Brazilian raw materials under the John Powell trademark, "Powco Brand."

Another purpose of the organization is to establish the base for Brazilian operations for manufacture of household and industrial insecticides, including aerosols.

Among new products under consideration at Powell, is a small package finished aerosol bomb.

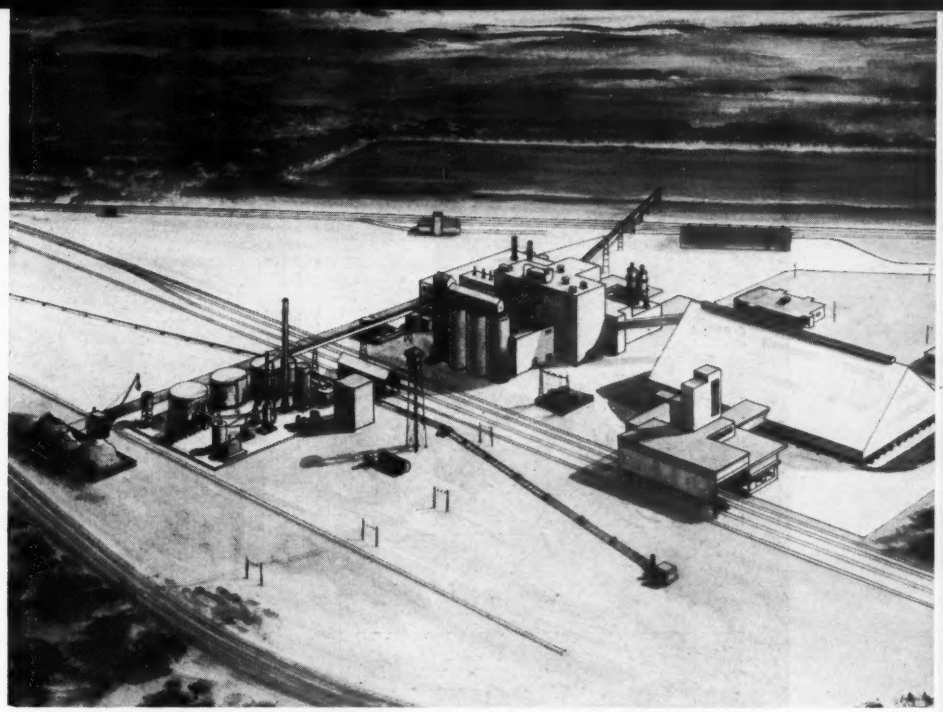
Plan Increase in Aerosols

"At present," Mr. Smith said, "we merchandise various aerosol formulations for insecticidal use in the aerosol package. It would be natural, and economically advantageous if we were to extend our present pilot-plant aerosol line in order to provide custom-made facilities for our customers."

Another aspect of the Powell organization, which deserves mention in any consideration of the corporation, is its progressive attitude toward its employes and its fine personnel programs—a program which the company claims is "as broad in benefits as any in our country and surpassing most."

The personnel program is just another phase of a vigorous organization that is constantly expanding, but constant to its policy of doing one thing completely, and doing it well. ◆

A leading maker of farm chemicals plans expansion



Artist's view of Davison Chemical Corporation's first plant for production of triple superphosphate, scheduled for 1954 operation.

Davison Builds Plant For Triple Super

AN IMPORTANT entry into the field of triple superphosphate production will be made early next year by Davison Chemical Corp., when its new Florida plant is completed.

The plant, costing $12,410,000, is being constructed at Bartow. It will have an annual capacity of 200,000 tons of triple super.

Davison is entering the field in a big way for, according to a recent survey by the Florida Development Commission, the unit under construction is the largest among construction projects now under way in the phosphate rock industry costing a total of $35,000,000.

To Use Dorr Process

The plant will be the first for the production of triple super in the United States to employ the patented Dorr process of acidulation.

In the process, developed by the Dorr Co., of Stamford, Conn., sulfuric acid is reacted with phosphate rock to produce phosphoric acid, which in turn is applied to additional phosphate rock for production of triple superphosphate.

Final product will be in both granulated and pulverized forms, Davison stated.

Current total capacity for the important farm chemical is estimated at 770,000 tons a year.

Davison estimates that by next year its output, added to other new and expanded operations will bring the industry total capacity to more than a million tons of the chemical a year.

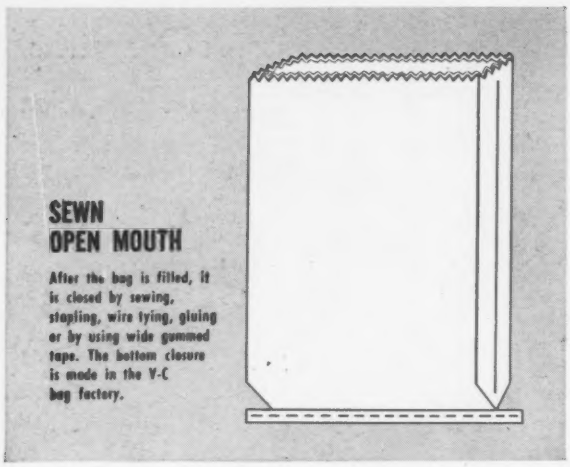
But demand by the end of 1954 is expected to rise to 1,600,000 tons, the USDA reports.

The Dorr Co. is architect engineers for the project.

Davison said it is going into production of triple super because the product, containing approximately 45 per cent P_2O_5, is essential in high-analysis fertilizer formulations which are gaining increasing importance among farmers.

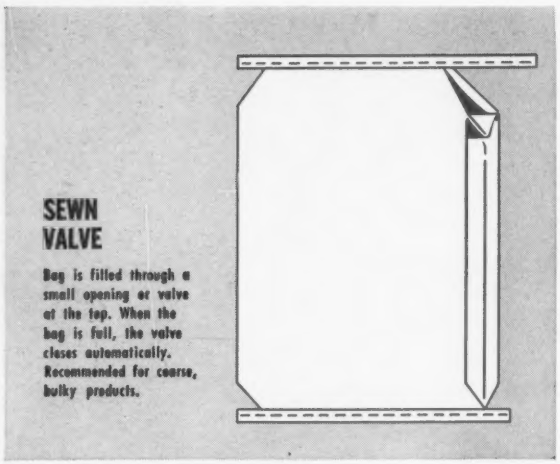
The new Florida plant is part of a $25,400,000 expansion program under way at Davison.

The contact sulfuric acid plant at the Bartow unit is scheduled to have a daily capacity of 550 tons of the acid. Storage silos will be constructed to hold 1,000 tons of phosphate rock. ◆



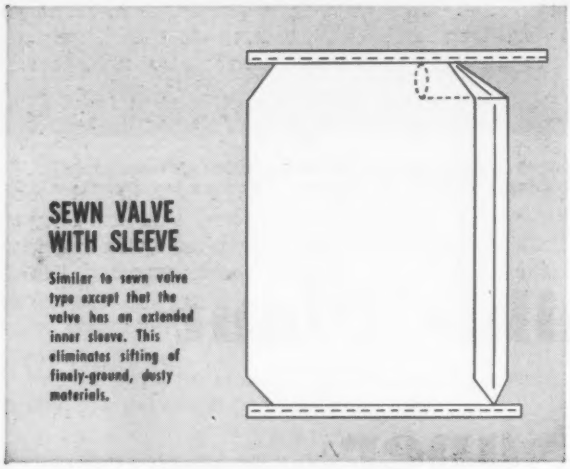
SEWN OPEN MOUTH

After the bag is filled, it is closed by sewing, stapling, wire tying, gluing or by using wide gummed tape. The bottom closure is made in the V-C bag factory.



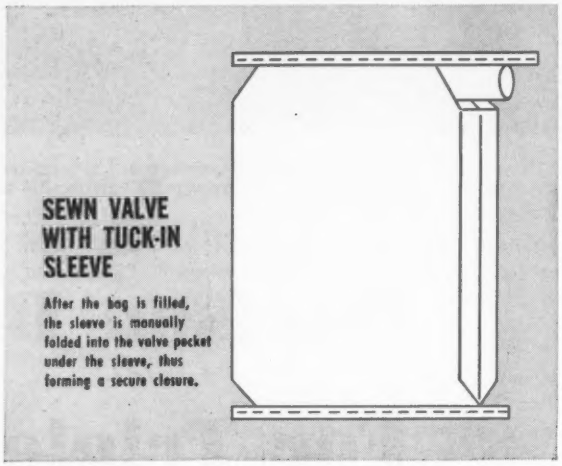
SEWN VALVE

Bag is filled through a small opening or valve at the top. When the bag is full, the valve closes automatically. Recommended for coarse, bulky products.



SEWN VALVE WITH SLEEVE

Similar to sewn valve type except that the valve has an extended inner sleeve. This eliminates sifting of finely-ground, dusty materials.



SEWN VALVE WITH TUCK-IN SLEEVE

After the bag is filled, the sleeve is manually folded into the valve pocket under the sleeve, thus forming a secure closure.

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Packaging is easier and more economical when you use the right type of multiwall bag. Each type has advantages for special kinds of jobs. If you have not reviewed your packaging requirements lately, it will pay you to consult a specially-trained V-C representative. Without cost or obligation, he will make recommendations that may save you money.

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VC BAGS®

It's On The Bag

(Continued from page 19)

requiring extra strength and durability. In the 100-lb. package, the use of 36″ 2.95 yard cotton osnaburg is standard.

Osnaburg Fabric

This fabric, of somewhat stronger tensile strength and considerably heavier weight, is used when there are extreme conditions of storage or transportation to be overcome. The cost is approximately the same as for the sheetings. Although the farmer has been educated to the use of the lighter, finer fabrics for household and clothes items, he still finds many uses for the osnaburg fabric.

Still part of some fertilizer mixers package requirements are 200 lb. bags. Where strength combined with reuse value is indicated, the manufacturer uses 200 lb. cotton fertilizer bags made from 40″ 2.11 yard osnaburg. This construction of cotton osnaburg has given way somewhat to the use of burlap which for the past season has been cheaper. But consumer demand in some localities has taught the manufacturer that the consumer will pay a little more for 200 lb. cotton bags because he saves more than he pays when he reuses the cotton fabric.

The introduction of the band label and the spot label has solved the manufacturer's problem of keeping his brand identification while preserving the appearance of the bag fabric. Because band labels and spot labels can be removed easily by soaking in water, the housewife can make use of the entire bag because no part of it has been touched by discoloring inks.

Mrs. Walter H. Judd, right, wife of the Minnesota congressman, and her daughter, Carolyn, model dresses made from cotton fertilizer bags.

At the same time, the manufacturer has kept the brand identification of his fertilizer.

Both the band label and the spot label are printed with the manufacturer's brand and then applied to the bag with a special adhesive which will not harm the fabric. Of the two, the band label supplies the best means of brand identification because the paper band extends around the entire girth of the bag. When seen in a stack or truck or on the dealer's floor, the brand and analysis can be read from any angle.

The band label also can be printed on both sides of the bag, whereas the spot label can only be printed and applied to one side. Spot labels on the other hand have the advantage of a slightly lower cost.

Further information on cotton bags may be had by writing to the Textile Bag Manufacturers Association, 611 Davis Street, Evanston, Ill. or the National Cotton Council, P. O. Box 18, Memphis, Tenn. ◆

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SINCE 1905

American Chemical Society will discuss

Systemic Pesticides, Fertilizer Usage

THE accent will be on systemic pesticides when members of the division of agricultural and food chemistry meet at the annual meeting of the American Chemical Society in Los Angeles March 15-19.

A symposium on systemics, scheduled for March 17, should be of great interest to pesticide manufacturers now conducting research with this new type of insecticide.

Chemicals used as systemics and descriptions of their modes of actions will be discussed at the convention.

A paper on the effect of fertilizers on the yield and composition of ranger alfalfa hay in Utah highlights the fertilizer side of the discussions.

Following are some abstracts of talks scheduled to be presented at the ACS convention, as released by Arthur N. Prater, chairman of the agricultural division of the Society. (Fuller reports on some of the abstracts will be presented in future issues of FARM CHEMICALS):

Effect of Fertilizers on the Yield and Composition of Ranger Alfalfa Hay in Utah—C. W. Jones, D. W. Pittman, R. Weiman, M. Habib, M. C. Cannon and D. A. Greenwood, Utah State Exp. Station.

Alfalfa is one of the most important forage crops in the United States; thus it is important to determine the best methods of producing maximum yields of hay with high nutritive value. The purpose of these studies was to determine the effect of different fertilizers on the yield and composition of Ranger alfalfa hay.

Tests were conducted in six counties widely distributed over Utah. The fertilizer consisted of different levels of triple superphosphate ranging from 0 to 516 pounds per acre, barnyard manure and trace elements consisting of copper, cobalt, boron, manganese and zinc.

Four replications of each fertilizer treatment were made at each location. These applications were made at the time of planting in the springs of 1947 and 1948 with no additional treatments being made after that time.

The yields of alfalfa hay obtained varied from location to location and from year to year. Significant increases, due to the phosphate treatments in the yield of alfalfa hay, were noted from three of the six locations studied for five consecutive years and one location showed significant increases for two years only.

These increases in yield varied from five to nearly 300 per cent. The addition of triple superphosphate plus the trace elements copper, cobalt and manganese resulted in significant increases of these elements in alfalfa produced during the first two years after the fertilizers were applied. Analyses of the alfalfa hay grown during the last three years of the test are being made and will be reported later.

Entomological Aspects of the Use of Systemic Insecticides—L. R. Jeppson, University of California, Citrus Experiment Station, Riverside, Calif.

Some important pest-control problems for which systemic insecticides offer most promise are reviewed. Factors which may limit the usefulness of available systemics and special problems of evaluating these materials as insecticides are illustrated with examples.

Techniques developed and initial results of research on insect and mite control with systemic insecticides are summarized. Possible changes which systemic insecticides may have on insect control principles and practices are projected.

The Basic Principles of Formulation—Leo R. Gardner, California Spray-Chemical Corp., Richmond, Calif.

Formulation consists of much more than a mere mixing of components and an organized and systematic approach is essential. The first requirement before beginning work on any new material is to determine its fundamental properties such as solubility, grindability and mammalian toxicity.

Next, a survey of field requirements must be made for types of formulations needed, concentrations of actives and the equipment they are to be used in.

The laboratory portion is a trial and error process based partially on previous experience but mainly on hunch, intuition and ability to evaluate results critically. Experiments must be well organized and some method set up for recording data. There is no standard approach and a shifting line of attack must be used.

After a suitable product has been developed in the laboratory, consideration must be given to factors such as cost, equipment needed and storage or shelf life. Appropriate tests must be set up to evaluate the latter. Package sizes and

(Continued on page 74)

FERTILIZER MATERIALS MARKET

New York

February 11, 1953

Sulfate of Ammonia

Imported material was reported sold at $47 per ton at the ports and even lower offerings were heard but could not be confirmed. Domestic material was available more freely and certain producers were said to be offering spot material for quick shipment. Most of the producers are sold out for the season but are having a difficult time getting the buyers to take in the material.

Ammonium Nitrate

This material still seems to be rather scarce although domestic producers are shipping against existing commitments.

Urea

While this material was hard to locate about a month ago, the situation seems to have eased up recently because of the fairly large amount of imported material arriving at various Atlantic ports.

Nitrogenous Tankage

Some imported and domestic material was available for sale but most buyers already have covered their season's requirements and sales were very scattered. Domestic prices range from $4.90 to $5.50 ($5.95 to $6.68 per unit N), according to shipping point.

Organics

Organic fertilizer materials displayed a mixed tone with soybean meal for nearby shipment selling down to $64 per ton, f.o.b. Decatur, Ill., in bulk. Futures were quoted slightly higher. Linseed meal was selling about $4 per ton lower than several weeks ago and last quotations were on the basis of $78 per ton, f.o.b. Minneapolis in bulk. Cottonseed meal was lower in price and considerably under ceiling prices at all shipping points. Tankage last sold at $5.50 per unit of ammonia ($6.68 per unit N), f.o.b. Eastern points, with blood selling at $5.75 per unit ($6.99 per unit N), f.o.b. New York, with the Chicago market slightly higher.

Fish Meal

Imported 60 per cent fish meal sold at $125 per ton, f.o.b. cars Eastern ports, with no reports yet of any menhaden fish meal selling on a "when and if made basis" for the new fishing season. Stocks of imported material were adequate to take care of expected demand at most ports.

Bone Meal

Feeding bone meal was a little easier in price but offerings of raw bone meal were very difficult to locate. The supply of imported feeding bone meal was very plentiful.

Hoof Meal

While last sales were made on the basis of $6.75 per unit of ammonia ($8.20 per unit N), f.o.b. Chicago, with firm bids it was felt this material might be bought slightly cheaper in price.

Superphosphate

Movement of this material was confined to buyer's immediate needs. Supplies now are said to be adequate at most points. Triple superphosphate is still in short supply.

Potash

The movement of this material was said to be a little better on contract but no new sales of imported material were reported although fairly large offerings were said to be available.

Low Grade Organics

Demand for these materials at this time of year is rather poor because most buyers already are under contract. Offerings of cocoa shells, garbage tankage and fillers are available in good quantity.

Philadelphia

February 11, 1953

The fertilizer materials market continues inactive, with blood and tankage lower. There is an almost complete absence of buying demand. Aside from ammonium nitrate, for which demand still exceeds production, most materials are in abundant supply. Farmers are backward in purchasing their spring requirements and are slow in taking delivery of goods already on order. However, it is estimated that considerably more complete fertilizer will be used this season than last.

Sulfate of Ammonia.—The demand is poor, but supply is ample. Considerable tonnage is scheduled for import; in fact, arrivals are reported already started.

Nitrate of Ammonia.—Production of this particular article still is behind the demand.

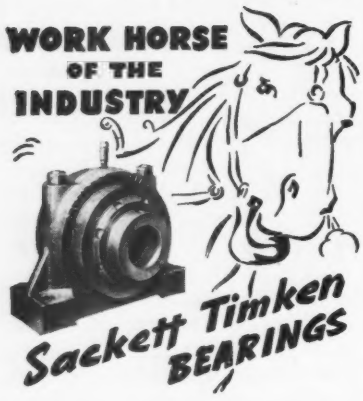
Nitrate of Soda.—There is seasonal limited buying interest. The market is steady and no price changes are noted.

Blood, Tankage, Bone.—Blood and tankage continue in a weak position. Prices range from $5 to $6 per unit of ammonia ($6.08 to $7.29 per unit N), depending on location, with buyers exceedingly scarce. Bone meal nominal at $75.

Castor Pomace.—Quantity is limited and continues to be quoted at $37.25 per ton, in bags.

Fish Scrap.—While domestic menhaden meal continues to be quoted at the ceiling price, there is little or no buying interest and imported meal can be had on a much lower basis. The quantity of fish meal imported during the previous season was considerably more than the domestic production.

Phosphate Rock.—Market is relatively quiet in both domestic and export. Any movement is on



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standing contracts and the supply of low grade continues to be quite ample to meet requirements.

Superphosphate.—Supplies are now plentiful with movement rather quiet. No price changes are reported. It is expected that production during the coming season will show a slight increase of normal grade, but very much more concentrated.

Potash.—Contract shipments are said to be moving a little better.

Charleston

February 11, 1953

Movement of mixed fertilizers to farms has been delayed, creating crowded storage conditions at fertilizer manufacturers' plants rather generally throughout the country. Manufacturers expect a rather short and compressed season.

Organics.—Interest in organics for fertilizer use at the moment is rather quiet with the major producers of domestic nitrogenous tankage in a well-sold position at prices ranging from $4.60 to $5 per unit of ammonia ($5.59 to $6.08 per unit N), bulk, f.o.b. production points. Imported nitrogenous tankage is available in limited quantities at around $6 per unit of ammonia ($7.29 per unit N), in bags, usual Atlantic ports.

Castor Pomace.—Domestic production continues at $37.25 per ton in burlap bags or $2 per ton less in paper bags, f.o.b. Northeastern production points. Analysis is guaranteed minimum 6.75 per cent ammonia and supplies are limited. Imported material varies in price from $36.50 to $43.50, ex-vessel Atlantic ports, depending on the quality.

Blood.—Unground dried blood in bulk in the Chicago area is around $6 per unit of ammonia ($7.29 per unit N). New York market is approximately the same.

Potash.—Domestic muriate of potash demand is relatively slack because of crowded storage conditions on the part of receivers, as a result of slow movement of mixed goods to the consumers. No change in prices has been noted and imported material is available for shipment from abroad and some limited stocks at the ports at prices slightly under domestic per unit cost at port.

Ground Cotton Bur Ash.—This source of potash, primarily in the form of carbonate of potash, is available for prompt and spread shipment at prices approximating the delivered cost of domestic sulfate of potash. Analysis is usually 38 per cent to 45 per cent, averaging about 41 per cent K_2O.

Phosphate Rock.—The market is relatively quiet with prices firm and unchanged. High grade Florida Rock supplies are somewhat tight but low grade is in good balance with demand.

Superphosphate. — Currently, supplies of normal grade are adequate to meet the demand and prices continue firm. Triple superphosphate continues short of demand.

Sulfate of Ammonia.—Supply position of domestic producers is considerably more comfortable than in previous months. Imported material also is available from stocks at Atlantic and Gulf ports. Prices of domestic material vary from $44 to $49.50 per ton, bulk, f.o.b. coke-oven, and imported material is held at $50 per ton, f.o.b. the ports.

Nitrate of Soda.—Stock piles of imported material appear to be adequate to meet the expected spring demand. Domestic supplies also are in good balance with demand and no change in prices has been noted.

Calcium Ammonium Nitrate.—From time to time vessels arrive at Atlantic and Gulf ports carrying various brands of calcium ammonium nitrate testing 20.5 per cent nitrogen. Current price is $51.25 per ton, f.o.b. cars at ports. Bagging is 100 lb. net weight burlap or paper bags.

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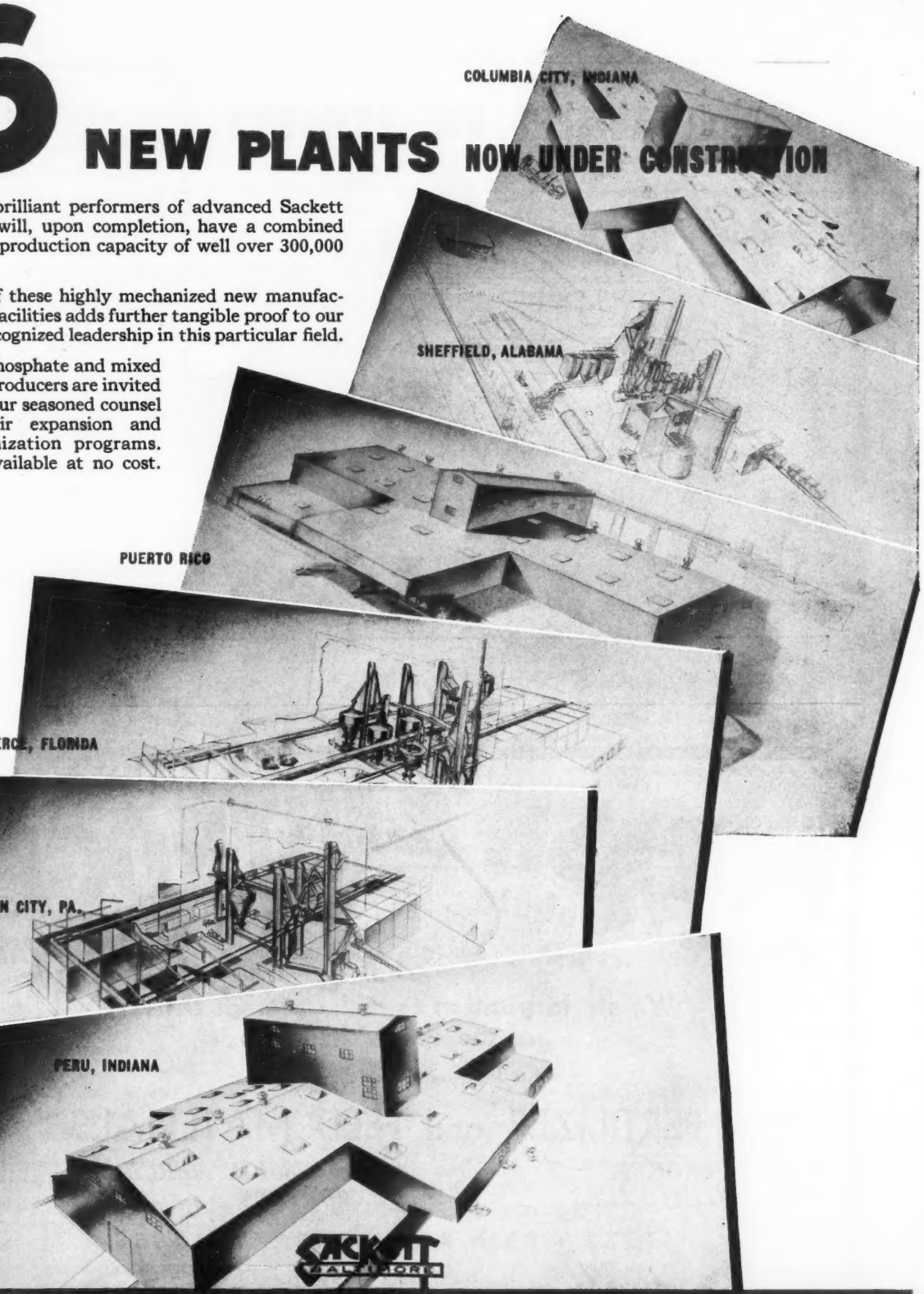

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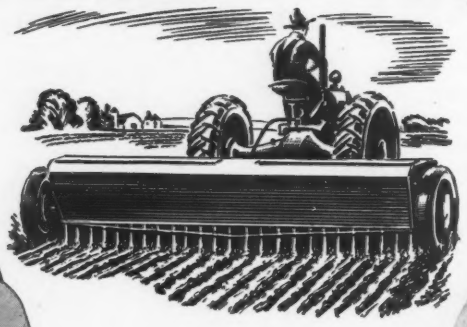

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Industrial News

New Products **New Plants** **New Appointments**

New Pesticide Laws Are Sought

Federal legislation calling for greater government control over the pesticide industry was forwarded in Washington last month.

Bills governing introduction and use of pesticides were dropped into Federal legislative hoppers by Rep. James J. Delaney (D.-N.Y.), remembered as chairman of the much-discussed Special Committee to investigate chemicals in foods, and Rep. A. L. Miller (R.-Neb.).

The bi-partisan nature of the legislative action made it uncertain at press time how the bills would fare when they come up before Congress for discussion and a vote.

The Delaney bills generally propose to carry out recommendations made by the committee he headed for two years. They would make pretesting of pesticides mandatory before their approval for use.

Although the bills place a time limit for approval or disapproval of pesticide materials by the Federal Security Administration.

The Miller bills, somewhat milder than Delaney's, would designate the Food and Drug Administration as the investigating body to determine safety of the chemicals.

The Delaney bills provide that before any person can introduce or deliver a chemical additive in interstate commerce he must obtain approval from FSA. In requesting this approval, the pesticide manufacturer would have to submit:

1. Reports of investigations which have been made to determine the acute and chronic toxicity and other potentiality for harm of the chemical additive; 2. a statement of the composition of the chemical additive; 3. a description of methods of analysis for the quantitive determination of the chemical additive in or on food, including animal or plant tissues if stored therein.

4. Such samples of the chemical additive as the administration may require; 5. all directions, recommendations and suggestions proposed for the use of the chemical additive and 6. if the chemical additive is a poisonous or deleterious substance:

A. A statement showing that the chemical additive is required in the production of food, B. reports of investigations which have been made to show the quantities of the chemical additive, if any, remaining in or on the food and C. a description of adequate methods of removal of excessive quantities of the chemical additive remaining in or on the food.

Planning Fertilizer Safety

Executive committee of the newly established Fertilizer Section of the National Safety Council meets in Chicago. Seated, from left, Jack Fields, Phillips Chemical Co.; Ned Dearborn, president of NSC; A. B. Pettit, Davison Chemical Co.; and Edwin C. Kapusta, National Fertilizer Association. Standing, Roger L. Hugg, International Minerals & Chemical Corp.; Curtis A. Cox, Virginia-Carolina Chemical Co.; J. L. Shopen, Consumers Cooperative Assoc.; F. Wayne High, Baugh Chemical Co. and P. T. Truitt, American Plant Food Council.

Commercial Dividend

Commercial Solvents Corp. last month declared a dividend of 25 cents a share on outstanding common stock, payable March 31 to stockholders of record at close of business March 4.

Aldrin for Wire Worm

Aldrin has been granted USDA lable acceptance for control of wire worms on Irish potatoes. Announcement of approval was made by F. W. Hatch, manager of the Julius Hyman & Co., division of Shell Chemical Corp.

Phosphate Rock Is Decontrolled by OPS

Among the many products decontrolled by the Office of Price Stabilization last month was phosphate rock.

Decontrol came under Amendment 40 to General Overriding Regulation 9. It is the first ruling to be issued affecting a fertilizer material.

OPS officials caution industry members that in some cases certain records pertaining to products must be maintained for periods up to two years.

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Now you can obtain your DDD technical and dust base requirements from the *same* producer which has long been a major supplier of DDT, Arsenicals, BHC, Lindane, Potassium Cyanate and other base materials for agricultural insecticides, fungicides and herbicides.

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Technical, Flake
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Dust Base, 50% & 75%

BHC
Technical (15%, 36% & 90% Gamma)
Dust Base, 12% Gamma

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Technical
Dust Base, 25%, 75%, 95%
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"Aramite"
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Dust Base, 25% Emulsifiable, 2 & 4 lbs. per gallon

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Dust Base (76% Ferric Dimethyl Dithiocarbamate)

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Dust Base (76% Zinc Dimethyl Dithiocarbamate)

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Industrial News

Better Business Bureau Gives Report on Soil Conditioners

Some important points about chemical soil conditioners were set forth last month in an interim report prepared by the National Better Business Bureau.

The release is intended as a guide in the preparation of accurate advertising of these new synthetic resins.

It follows the bureau's June, 1952 preliminary memo on soil conditioners.

Although the latest report stresses that "The most salient fact we have developed in the past half year of study is that much remains unknown, or unproven, about the performance of soil conditioners under actual use conditions throughout the country" it makes several statements of interest to the industry.

'No Uniform Tests'

The report bemoans the "woeful lack of uniform testing procedures" and blames this lack for the inability to determine relative value of the many conditioners on the market.

Until standardization of testing procedures is established, the Bureau cautions advertisers should "avoid scientific claims for which scientific proof is not available. It further believes that advertising media, in the interest of the public should refuse advertising for which proof of claims cannot be established."

After giving a brief description of the mode of action of the chemical conditioners it goes on to make these key statements:

Some Key Statements

1. Quantities of rainfall, equivalent to average national annual rates, have tended to break down aggregates fixed by chemical soil conditioners at an appreciable rate, proportionate to the degree concentrations are reduced.

2. Firms which combine a fertilizer with a soil conditioner may properly advertise the benefits of both soil structure improvement (from the soil conditioner) and rapid growth of plants (from the fertilizer), if the fertilizer is present in adequate amounts.

3. Majority of authorities believe it is necessary to list the percentage of active ingredients on the label and in advertising, not only to deter "loading" of a product with a heavy percentage of inert and explosive material, but also to give the customer some knowledge of the strength of the material he is using so that he can gauge more adequately its coverage considering the soil he is to treat.

4. Any difference in value of hydrolized polyacrylonitriles and vinyl acetate maleic acid co-polymers, as far as field utility is concerned, has not been sufficiently demonstrated to warrant positive claims at this time, according to experts consulted.

5. Preparation of the soil for optimum results is almost uniformly held to be essential.

6. Claims that sandy soils will be turned into fertile loam with conditioners are questionable.

7. Cost comparison data on competitive conditioners are not available.

The complete report is available from the National Better Business Bureau at 405 Lexington Ave., New York City.

Von Wyl to Pioneer

New staff member of Pioneer Chemical Associates is Paul H. Von Wyl, who will be located at the company's executive offices in Denver, Col.

Von Wyl recently completed two years' service in Army laboratories, seven months of that time in Korea. He will be concerned with technical service and sales activities at Pioneer.

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MARIETTA concrete stave storage tanks are quickly, permanently erected in any size, any arrangement, to improve your storage operations. Provide large capacity to handle increased output, offer air-tight, moisture-free facilities that keep agricultural chemicals dry, fully protected from fire and the elements. Let MARIETTA engineers design a modern, economical concrete storage system for you to reduce loss of stored materials, give you efficient, profitable storage and handling facilities. Write, wire or phone for their recommendations . . . TODAY!

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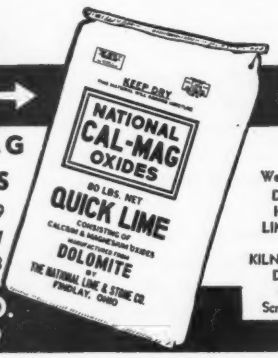

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Industrial News

Pesticide Consumption Discussed by Shepard

Harold H. Shepard, of the Production and Marketing Administration, discussed "Trends in the Production and Consumption of Pesticidal Chemicals" at a farm chemicals meeting held late last month in Baltimore.

The meeting was sponsored by the Chemical Market Research Association, and was held Feb. 25 and 26 in the Lord Baltimore hotel. A talk on new developments and things needed in the field of chemicals for agricultural was given by W. C. Dutton, director of field research for agricultural chemicals, Dow Chemical Co.

"Mapping the Markets for Soil Conditioners" was the topic of a timely report by Richard M. Lawrence of Monsanto Chemical Co.

Other speakers and their topics included William N. Watmough Jr., vice president of Davison Chemical Corp., "The Present Consumption of Plant Food Materials in the U.S."; Dr. Russell Coleman, president of the National Fertilizer Association, "Opportunities for Marketing Fertilizers in the U. S." and S. L. Nevins, vice president of Mathieson Chemical Corp., who spoke on the outlook for farm chemicals.

Elsas Elected

The president of Fulton Bag & Cotton Mills was elected national president of the Textile Bag Manufacturers Association at a recent meeting in Houston, Tex.

The new president, Clarence E. Elsas, is a grandson of Jacob Elsas, founder of the company. He has been active in the textile industry since joining Fulton in 1926.

Hercules Makes Films

Proper insect control is the theme of three new 16 mm. films in sound and full color produced by Hercules Powder Co.

They are designed to help growers of seed, cereal and forage crops increase yields with pest control measures.

The films are being distributed by the company to state extension services where they will be used at farm meetings throughout the state.

Swain With Potash

Albert F. Swain was named sales manager of the agricultural chemicals department of American Potash & Chemical Corp. early this month. He will serve in the western division.

He had been employed since 1945 with Eston Chemicals, Inc., of Los Angeles, which was acquired by American Potash last year.

Margolati Joins Carnegie

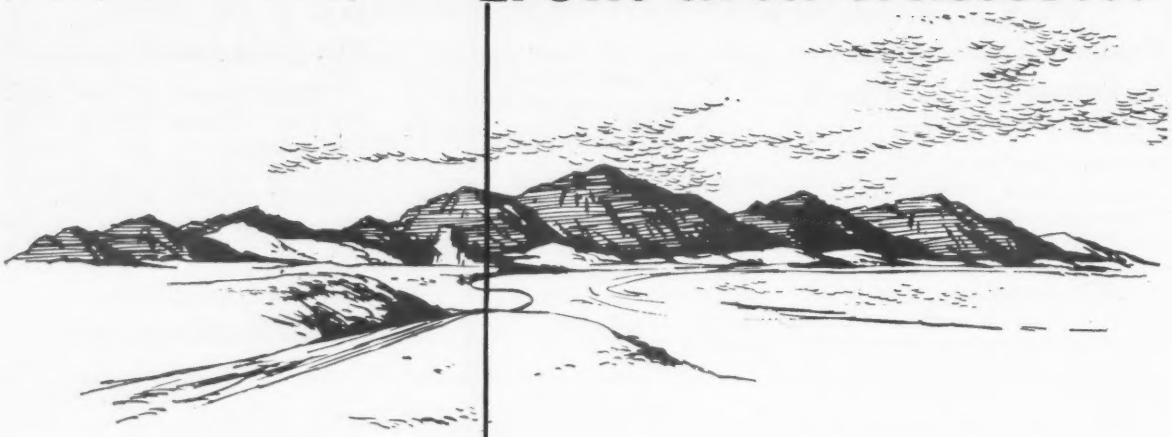
Frank Margolati, now with Westvaco Chemical Division of the Food Machinery and Chemical Corp. will join Carnegie Chemical Manufacturing Co. March 16.

He has been Westvaco's Southern California sales manager for the past six years.

Woodrich With Chase

New sales representative for Chase Bag Co. is E. M. Woodrich, who will handle the Oklahoma area for the company.

from arid wastes...

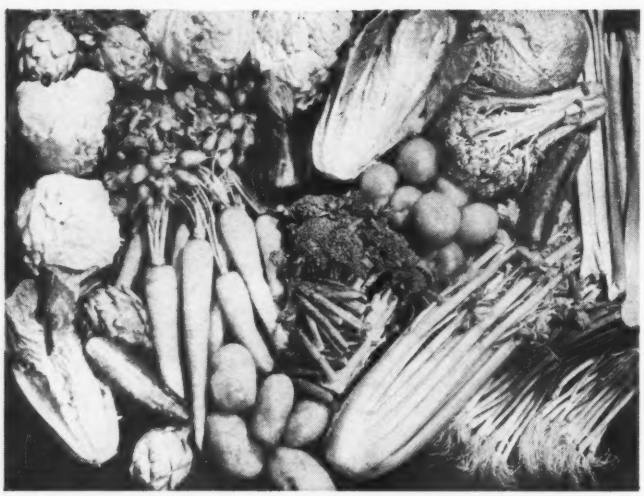


CHEMICALS FOR BUMPER CROPS

The American Potash plant at Trona, in the midst of the California desert area, is situated beside a vast stockpile of raw chemicals essential to agriculture. Under the brand names of *Trona* and *Eston* these chemicals in processed and refined forms, are playing an ever increasing part in growing better and bigger crops. Trona Potash is an essential element in mixed fertilizers. Trona Borax is used to correct soil deficiencies. Eston products include fumigants, defoliants, insecticides and herbicides.

In preparing soil, fertilizing plant growth and protecting it from the attack of destructive insect life, American Potash makes a vital contribution to the greatest industry of all—agriculture.

You can buy Trona-Eston agricultural chemicals with confidence—they are *proved* by many years of research and field usage.



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BROMOFUME* (soil fumigants)	TETRON* (Tetraethyl pyrophosphate formulations)	Sulphate of Potash
ESTOMITE* (residual type miticide)	TUMBLEAF† (defoliants)	Borax, Technical
ESTONATE* (DDT dust concentrates and emulsified solutions)	TUMBLE-WEED† (herbicides)	Sodium Pentaborate
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3100 East 26th Street, Los Angeles 23, California

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Industrial News

Named Director

C. T. Prindeville

C. T. Prindeville, vice president of Swift & Co., recently was named a director of the company.

Prindeville joined Swift 32 years ago as a cattle driver and worked his way up to a top position with the company.

Earlier he served as a weight taker and as a time study manager. He was later associated with the oil mill and vegetable oil refinery operations.

He was elected vice president in 1941.

Industry Personnel Named to MCA Groups

Several members of the farm chemicals industry were named to committees by the Manufacturing Chemists Association in recent appointments.

They include: Paul Logue, Monsanto Chemical Co., chairman of committee on chemicals in foods; Harry A. Kuhn, Allied Chemical & Dye Corp., Paul D. V. Manning, International Minerals & Chemical Corp., Rothe Weigel, Victor Chemical Works and Ernest W. Reid, Corn Products Refining Co., all serving under Logue on the committee.

Arthur Northwood Jr., of Shell Chemical Corp., replaced M. H. Keel on the public relations advisory committee of the association.

Backlund Named V.P. For Lincoln Service

B. F. "Chip" Backlund has been named vice president in charge of sales for Lincoln Service & Supply, Inc., of Lincoln, Neb.

Backlund joined the fertilizer company in 1949 and was appointed sales manager two years ago.

Lincoln also announced formation of Falls City Fertilizer, Inc. for manufacturing complete fertilizer. It is located at Falls City, Neb., and will be in production by May.

Backlund is vice president of this company also. Howard L. Peterson, president of Lincoln, heads the new company. Gilles L. Downey is secretary-treasurer.

Lindane Price Cut

A price cut in lindane was announced last month by the organic chemicals division of Diamond Alkali Co.

Constant research and development were credited for the drop.

Whereas the insecticidal material formerly cost a flat $4.50 a pound for any quantity it now costs from $2.75 to $3.35 a pound, depending on quantity.

Methoxychlor Advised For Pest of Alfalfa

Entomologists faced with the problem of controlling the alfalfa caterpillar should turn to methoxychlor to do the job, according to the U. S. Department of Agriculture.

Early this month the insect is expected to start to work in alfalfa fields in the southern part of Arizona and in California.

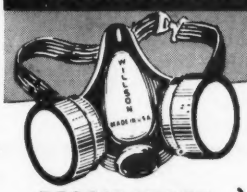
Using methoxychlor, harvesting early and mowing close can give good control, according to the Department.

DDT for Beetle

A timely application of DDT can control the elm leaf beetle, the USDA reports.

The Department recommends application of the insecticide to the under side of elm leaves with a hydraulic sprayer or mist blower for satisfactory control.

LUNG and EYE
protection
FOR AGRICULTURAL CHEMICAL WORKERS



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Comfortable, efficient protection for light concentrations of insecticides.

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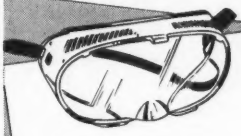
Lightweight, easy-to-wear full-face protection for heavy concentrations of insecticides. Types for all hazards. State material being used



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Lightweight, all plastic eye protection for handling chemicals and for impact hazards

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This is our Fig. 645 Nozzle. Used for Scrubbing Acid Phosphate Gases. Made for "full" or "hollow" cone in brass and "Everdur." We also make "Non-Clog" Nozzles in Brass and Steel, and

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BATCH MIXERS — PULVERIZERS — CAGE MILLS — SCREENS — SCALES
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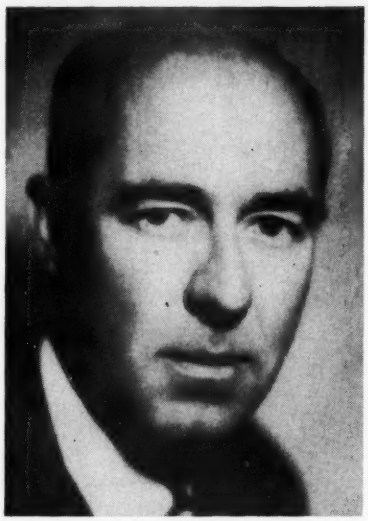
ATLANTA UTILITY WORKS EAST POINT, GA.

Industrial News

New Consultant



Friar M. Thompson, Jr.

A consulting business in pesticides will be established soon by Friar M. Thompson Jr., who resigned last month as vice-president of Prentiss Drug & Chemical Co.

Thompson was manager of the company's insecticide department.

His new business will be set up in Athens, Ga., where Thompson will specialize in insecticides, rodenticides, herbicides, fungicides, seed disinfectants and in chemicals related to the Southeast grasslands program.

Thompson had been associated with Prentiss for eight years. He had served with Hercules Powder Co. for 15 years previous to that in insecticide research, development and sales.

He will also be concerned with rodent and insect control work and in associated problems of sanitation for household and industry. He has been named staff consultant for the Industrial Toxicological Laboratory, Philadelphia and the Wisconsin Alumni Research Foundation, Madison, Wis.

Taylor Gets Post

James L. Taylor has been named chief project engineer in charge of construction for International Minerals & Chemical Corp.'s engineering division.

In another personnel move, Robert F. Marek was appointed chief project engineer in charge of industrial engineering for the division.

Arkansas Increases Tax on Fertilizers

Tax on chemical fertilizers in Arkansas has been almost doubled by the state house of representatives.

By a vote of 76 to 10 the tax was increased from 12½ cents a ton to 24 cents.

The 11½ cent increase, proposed by the Arkansas Farm Bureau, will finance operation of a soil testing laboratory by the University of Arkansas.

Ammonia N for Berries

The ammonia form of nitrogen is preferred over the nitrate form for blueberries in New York, the agricultural station reports.

For over sixty years Triangle Brand Copper Sulphates in various forms have been the standard of quality for agricultural chemicals.

In the preparation of Bordeaux Mixture sprays the new method using Triangle Brand "Instant" Copper Sulphate 99% pure has superseded the old formulations. Requiring no need of a stock solution, the "Instant" form may be added directly to a Chemically Hydrated lime which need not be slaked.

Dusts are most effective when prepared with Triangle Brand Basic Copper Sulphate and the proper diluent. No lime is necessary. Concentrations of from 7-10% copper can be maintained.

Fertilizers with Triangle Brand Copper Sulphate added in their formulation will provide the necessary amount of this element vital to better crops.

Triangle Brand Copper Sulphate is available in Large and Small Crystals, Superfine (new snow form), and the "Instant" (powder) forms which contain 25.2% metallic copper. Triangle Brand Basic Copper Sulphate is available in powder form (average particle size is 2 microns) and contains 53% metallic copper.

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DAVISON

1. STORAGE CONTROL—will not cake or lump while in storage.

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3. FOOD CONTROL—supplies uniform amount of plant food at desirable rates.

Davison's Granulated Superphosphate with 3-way control can mean added sales for you!

No longer is it necessary for you or the farmer to worry about lumping or caking . . . Davison's Granulated Superphosphate will store without becoming hard or caked. And when the farmer starts to apply Granulated Superphosphate in the field he will find there is no dusting nor will it bridge over in the drill. Granulated Superphosphate drills freely and evenly giving complete coverage. Because of the granular structure, plant food is released at desirable rates.

For added sales points be sure to get *Davison's Granulated Superphosphate with the 3-way control!*

Progress Through Chemistry

THE DAVISON CHEMICAL CORPORATION

Baltimore 3, Maryland

PRODUCERS OF: CATALYSTS, INORGANIC ACIDS, SUPERPHOSPHATES, PHOSPHATE ROCK, SILICA GELS, SILICOFLUORIDES AND FERTILIZERS.

Industrial News

Succeeds Noble

W. G. Hewitt

Retirement of farm chemicals executives is a fairly common thing in the industry but retirement of such a man as Weller Noble is a rarity.

That was the opinion of leaders in the trade last month when Pacific Guano Co. made a brief announcement to the press of the retirement of Noble as president and general manager of the company, effective April 1. It said his successor would be W. G. Hewitt.

The news release told about Noble's 45 years of service with Pacific Guano and the predecessor mainland companies. It told of his elevation to the post of vice president and general manager of the company in 1935.

The release, however, didn't tell the human side of the story about Weller Noble. It didn't mention how revered he is among fertilizer manufacturers throughout the country. It didn't cite his many valuable contributions to trade associations during his years with Pacific.

And it didn't mention his vigorous participation in activities of the California Fertilizer Association, nor the noteworthy fact that he is a charter member of that organization.

Cahill Joins International

Newly elected assistant treasurer of International Minerals & Chemical Corp. is Arthur R. Cahill. He will serve on the staff of Robert P. Resch, vice president and treasurer of the corporation.

Cahill formerly was vice president and treasurer of Montgomery Ward & Co.

Allen Named Manager Of Pesticide Sales Unit

Frank D. Allen has been appointed manager of a sales and service office newly opened in Yakima, Wash.

The office was opened by United Chemical Co., Heckathorn & Co. and Agricultural Chemicals Service Co., of Richmond, Cal.

Allen formerly served with California Spray-Chemicals Corp. in the control laboratory at Richmond. He is an entomologist.

Allen also has been employed by American Cyanamid in the Pacific Northwest, coordinating research and development work in farm chemicals.

The three companies operate under the same management and have sales offices in Sacramento, Fresno, Bakersfield and Pomona, Cal. They manufacture and distribute a complete line of pesticides and fertilizers in five western states.

Schroeder Joins Hayes

Hayes-Simmons Chemical Co., of Mission and Houston, Tex., and Reynosa, Mexico has added a ninth entomologist to its staff.

He is E. W. Schroeder, who was graduated in 1949 from Texas A & M in entomology.

The company distributes insecticides in southern states and in Mexico.

Agricultural Research

The first issue of *Agricultural Research* was distributed early this month by the Agricultural Research Administration, USDA. It is a bi-monthly report on latest department research and will be issued monthly after July.

Your partners

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are the farm families throughout the nation who buy your products. Many of their production needs are closely related to yours.

Their success in meeting this year's greatly increased food and fiber goals depends to a large extent upon your ability to manufacture and distribute essential supplies of fertilizers and pesticides.

Farm organization leaders, along with their experienced Washington staffs, are constantly presenting factual data on farm operations to key Congressional and Government officials.

Mounting defense production problems clearly show the need for close liaison between leaders in both groups.

It is apparent that you will both make a greater contribution toward a stronger America with a full breadbasket by . . . working together as partners.

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(95% Nitrate of Potash)
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Special Mixtures and Soluble Fertilizers
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46 to 48% Available Phosphoric Acid

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Sulphur

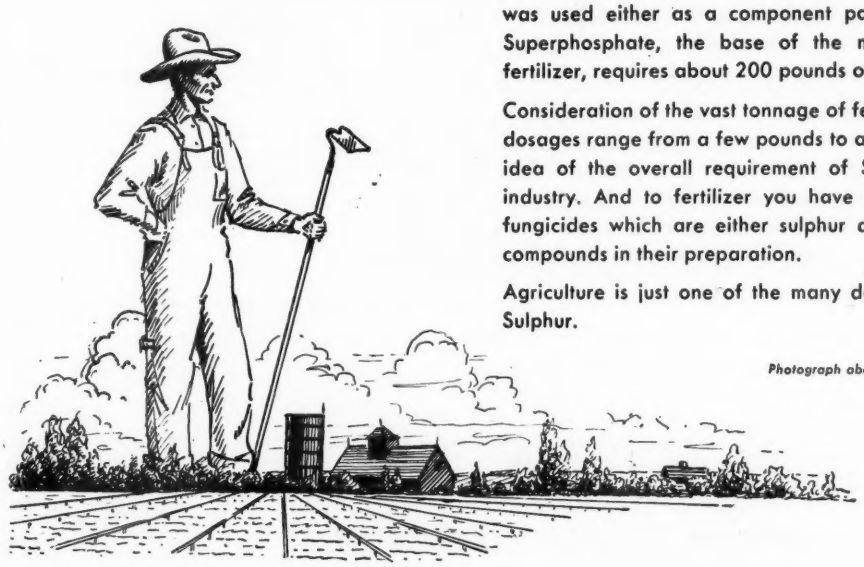
Thousands of tons mined daily, but where does it all go?

THE DEPARTMENT OF AGRICULTURE reports that in 1950 some 336,000,000 acres of land in the United States were under crop cultivation. That's a lot of acreage.

But where, you might ask, is the connection with Sulphur? Fertilizer, to take just one phase of agriculturally-used chemicals in which Sulphur was used either as a component part or as a processing element! Superphosphate, the base of the most widely used manufactured fertilizer, requires about 200 pounds of Sulphur for every ton produced.

Consideration of the vast tonnage of fertilizer used in agriculture — and dosages range from a few pounds to a ton or more per acre — gives an idea of the overall requirement of Sulphur for this one division of industry. And to fertilizer you have to add all the insecticides and fungicides which are either sulphur derivatives or have used sulphur compounds in their preparation.

Agriculture is just one of the many destinations of great tonnages of Sulphur.



Photograph above shows our loading dock at Galveston, Texas

Texas Gulf Sulphur Co.

75 East 45th Street, New York 17, N. Y.

Mines: Newgulf and Moss Bluff, Texas

ACCELERATED FERTILIZER CONDITIONING

WITH TENNESSEE'S

SUL-FON-ATE AA9!

Our own fertilizer plants have been experimenting with wetting agents to reduce curing time and prevent secondary caking of mixed fertilizers. SUL-FON-ATE AA 9 has been found to be very effective in this application and it is now being regularly used by our plants.

Tennessee's SUL-FON-ATE AA 9 is an alkyl aryl sulfonate containing 90% active ingredient. It is a powerful wetting and penetrating agent that promotes better contact between the fertilizer components. This intimate contact reduces the time required for completion of the reaction.

UNTREATED

TREATED

These pictures show the effect of the addition of Tennessee's SUL-FON-ATE AA 9 to one of our more troublesome formulas: Four units of nitrogen came from solution and the other two from sulphate of ammonia. Both samples were cured for 4 days and then bagged. The bags were stacked for 10 days and the above samples were taken from the bottom bags.

METHOD OF APPLICATION

Since manufacturing processes vary widely in fertilizer plants, the best method of introduction into the mixer must be determined at each plant. Our plants prefer to distribute it on the conveyor belt feeding into the mixer. In the pictures shown SUL-FON-ATE AA9 was added to the potash. It is not necessary to make any changes in operating procedure.

For further Information, please contact

ORGANIC CHEMICALS DIVISION

TENNESSEE TC TENNESSEE CORPORATION **CORPORATION**

617-29 Grant Building, **Atlanta, Georgia**

617-29 GRANT BUILDING, ATLANTA, GEORGIA

Industrial News

NFA Distributes Reprints To Association Members

The National Fertilizer Association last month distributed to its members two reprints of articles pertaining to farming and fertilizer usage.

For possible use by field representatives of fertilizer manufacturers was a reprint of an article called "Soil Tests, Bankers and Agricultural Wealth," by H. R. Albrecht, head of the Department of Agronomy at Pennsylvania State College.

It appeared originally in the February, 1953 issue of the Pennsylvania Bankers Association Bulletin.

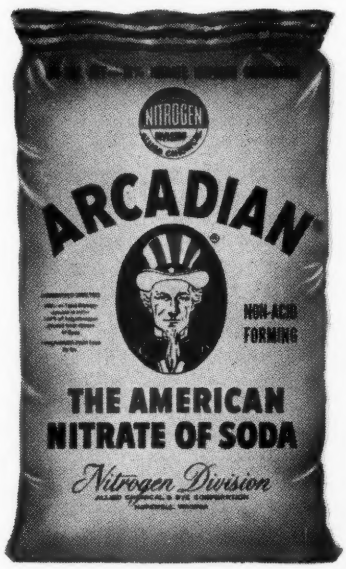
The other article, on "Farm Fertilizers," was printed in the Wall Street Journal Feb. 13.

John F. Gale, economist for NFA, made several contributions to the feature article, the association reported. It recounts individual achievements by farmers.

Fuller Joins Spencer As Sales Representative

New Alabama sales representative for Spencer Chemical Co. is Roy T. Fuller, of Montgomery, Ala.

He served previously as assistant county agent at Jasper, Ala. for two years and was assistant agricultural editor for the Alabama extension service at Auburn. He was graduated from Alabama Polytechnic Institute in 1946.



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Bigger Yields

TOP-DRESS EARLY!

Small Grain crops need nitrogen *early*, to make vigorous growth and produce abundant yields.

In the late winter or early spring just before growth starts, top-dress each acre with 100 to 300 pounds of ARCADIAN*, *the American* Nitrate of Soda.

ARCADIAN Nitrate of Soda is the genuine, old reliable Soda many thousands of farmers have used for many years. It contains 16% or more nitrogen, all soluble, quick acting and immediately available. Early top-dressing with ARCADIAN Nitrate of Soda *makes grain get up and grow!* It doubles and trebles the number of stalks per plant with each extra stalk an added producer of big yields of high-quality grain.

Here is another dependable nitrogen top-dressing material for any crop. A-N-L* Nitrogen Fertilizer contains 20.5% nitrogen—10.2% in quick-acting nitrate form and 10.3% in long-lasting ammonia form. It also contains 7% magnesium oxide equivalent.

NITROGEN DIVISION ALLIED CHEMICAL

Nitrogen Division

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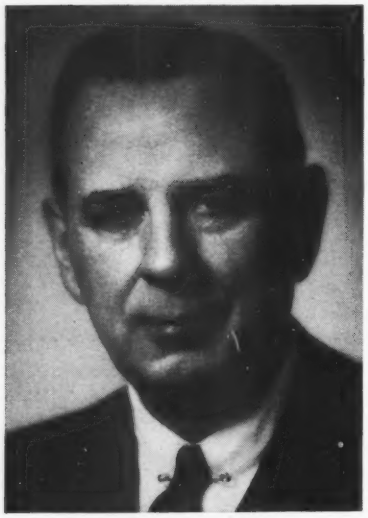
Industrial News

Board Member



Harold W. Comfort

New member of the board of directors of Commercial Solvents Corp. is Harold W. Comfort, executive vice president of the Borden Company.

Comfort has been associated with Borden since 1928.

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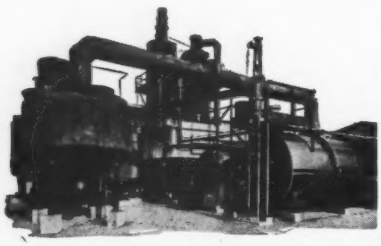

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NFA Issues Booklet On Fertilizer Usage

A fascinating compilation of figures on fertilizer usage and what it can mean to a farmer is presented in an easy to read booklet just issued by the National Fertilizer Association.

Titled "Fertilizer — A Cornerstone of the Welfare of the Nation," it tells, with the aid of graphs and photos, how much fertilizer is being used in the United States and the results obtained therefrom, in dollars and cents.

Also included are tables on fertilizer production in the U.S. and agricultural college recommendations for plant foods.

Copies are available from NFA headquarters, 616 Investment Building, Wash. 5, D.C.

Fertilizer Shipments Decline in January

A drop of 58,000 tons in shipments of fertilizer during January from the same month last year was reported by the National Fertilizer Association.

The figures were given in the Association's compilation of fertilizer tax tag sales and reports of shipments of plant foods.

Total for January, 1953, was 661,000 short tons, compared with 719,000 tons for January, 1952.

Similarly, sales and reports of shipments for the last quarter of 1952 were 160,000 tons below the same period in 1951, when the total was 2,142,000 tons.

Fertilizer Group Named In Congress by Hope

A subcommittee to "keep a close watch" on the fertilizer situation was appointed in Congress late last month.

The group was appointed by Rep. Clifford R. Hope, of Kansas, chairman of the House committee on agriculture. Named to be chairman of the subcommittee was Charles B. Hoeven of Iowa.

Eight other Congressmen were selected to serve on the group.

Rep. Hoeven said there appears to be no reason for any acute shortage of fertilizer materials this year but said the subcommittee would follow the situation closely.

California Fertilizer Group Sponsors Confab

The first fertilizer conference to be sponsored by the soil improvement committee of the California Fertilizer Association will be held May 7 and 8 in Marysville, Cal.

Technical discussions, supplemented with colored slides showing response to various plant food materials and deficiency symptoms will be featured.

Taking part will be college technicians, members of the U. S. Department of Agriculture, the Soil Conservation Society and industry personnel.

Albright Is Author

The president of the United States Potash Co., Horace M. Albright, is the author, with Frank J. Taylor, of an article on the job of preserving stands of giant redwood trees for posterity. The article, called "How We Saved The Big Trees," was published in the February 7, issue of the *Saturday Evening Post.*

Albright, before joining U. S. Potash, served as director of the National Park Service.

REPRINTS

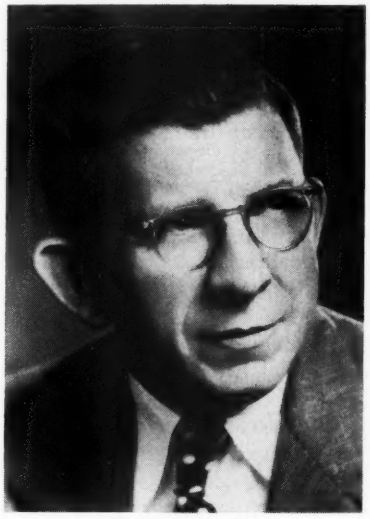
of articles appearing in

FARM CHEMICALS

are available.

Contact Editor for prices.

Industry Men Meet Agronomists



W. A. Albrecht

L. M. Turk

SEVERAL hundred members of the fertilizer industry heard reports on latest fertilizer and soil research at the joint meeting of industry and college agronomists in Chicago.

The meeting, held Feb. 20 in the Palmer House, was sponsored by the Middle West Soil Improvement Committee.

With the USDA and the Land Grant Colleges concerned with getting farmers to use more fertilizer and lime, the meeting brought forth some valuable ammunition to spark that drive.

Seven talks by leading agronomists summarized information on method and time of application of fertilizers and other subjects of importance to farmers and to the fertilizer industry.

One talk by L. M. Turk and E. D. Longnecker, of Michigan State College, was concerned with the USDA drive itself, with emphasis on the educational program being done in the North Central region of the United States.

USDA Drive

The talk answered the question "Why are farmers using so little lime?" with the statement that many farmers don't recognize the importance of the material while others are not using soil testing facilities to determine need.

In a speech on methods of applying nitrogenous fertilizer, by F. W. Smith, it was reported that "inasmuch as financial remuneration for the use of nitrogen fertilizer on wheat normally depends upon increases in yield rather than on increases in protein content, there is no good reason to recommend foliar sprays for wheat production rather than conventional dry applications."

Fall Plowing

Fall plowing under of phosphorus and potassium fertilizers where fall plowing is practiced is considered acceptable according to John T. Pesek Jr., of Iowa State College, in a talk on time of application of fertilizers.

Seven determinants of efficient use of fertilizer were enumerated by Turk, R. L. Cook and J. F. Davis, of Michigan State Col-

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Industrial News

lege. They listed fertilizer ratio, rate of application, method of placement, nature of cropping system, place where used in the rotation, properties of the soil and weather conditions as vital factors.

Dr. Cook also gave a "progress report" on studies to compare granulated superphosphate with powdered superphosphate by means of tracer techniques. He said further tests were in progress.

Concluding the session were talks by W. R. Alstetter, vice president of the National Fertilizer Association, on "Disposition of Proposed Future Fertilizer Output" and W. A. Albrecht, University of Missouri, on "Some Aims of Soil Research."

Z. H. Beers, executive secretary of the Middle West Soil Improvement Association, said agronomists attending the meeting adopted a list of recommended fertilizer ratios for middle western states.

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Production of Super Increases in December

Production of concentrated superphosphate increased 13 per cent in December, 1952, over the previous month while production of wet-base goods slipped 26 per cent.

Production of normal superphosphate was 746,934 tons for the month; concentrated—74,801 and wet-base—5,101.

Production of normal superphosphate was approximately the same as in November, according to a report from the U. S. Department of Commerce.

Compared with figures for the same period in 1951, normal super and wet-base goods rose one and 19 per cent respectively while concentrated declined 39 per cent.

Stocks on hand at the end of December were seven per cent higher for normal, nine per cent for concentrated and 18 per cent for wet-base goods, compared to November.

Dust for Broccoli

A dust containing three per cent DDT and one per cent parathion is best for maintaining good insect control on broccoli, the New York State Agricultural Experiment Station reports.

Dust should be applied before heads begin to form, the station advises.

Production Up

An increase in production of lime ammonium nitrate was reported for 1952 by the Linz fertilizer company in Vienna, called "Osterreichische Stickstoffwerke."

Production rose to 463,000 tons from 436,000 in 1951.

ACS Meeting . . .

(Continued from page 52)

packaging problems must be evaluated and an actual plant batch made to see whether the formulation must be changed to fit the equipment available. The final step is extensive field testing to check its behavior under a variety of conditions, to determine the best conditions of usage and to collect the data needed for registration and labeling.

Problems of Formulating Liquid Concentrates—Edgar Selz, The Emulsol Corp., Chicago 3, Ill.

In the successful formulation of toxicants as emulsifiable concentrates, factors to be considered include the following: The choice of the solvent depends on the toxicant solubility, especially at low temperatures; in addition, the solvent should have a moderately high flash point and a low order of phytotoxicity or irritation and it should be low in cost and plentiful in supply.

Effect of Formulation on Pesticidal Effectiveness—Walter Ebeling, University of California, Los Angeles, Calif.

Differences in pesticidal effect due to formulation vary greatly with different methods of application and different pests. Data are presented from laboratory and field experiments with fruit flies. thrips and mites.

In experiments with a settling tower, emulsions were greatly superior to suspensions in topical effect against mites except when the particles in the suspension remained discrete up to the instant of alighting on the bodies of the mites. With fruit flies this factor was relatively unimportant.

With laboratory spray equipment, the differences in the two formulations were greatly decreased because better agitation and decreased period required for the liquid drops to reach the sprayed surface reduced the tendency toward flocculation; likewise the ability of the spray to wash the surface resulted in a more uniform distribution of the particles.

Modern pesticides owe their increased efficiency in part to their prolonged residual effectiveness. The emulsifiable concentrates, formulated to meet the practical needs of available low-volume application equipment, are sometimes greatly inferior to the wettable powders in residual effectiveness. This is believed to be primarily due to the reduced "pick up" of toxicant by the pest, when compared to formulations that result in a particulate residue.

Buyers' Guide

Classified Index to Advertisers in 'Farm Chemicals'

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Pittsburgh Agricultural Chemical Co., N. Y. C.

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Nitrogen Div., Allied Chemical & Dye Corp., N.Y.C.
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Monsanto Chem. Co., St. Louis, Mo.

AMMONIUM SULFATE
See Sulfate of Ammonia

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Pittsburgh Agricultural Chemical Co., N. Y. C.

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Jackle, Frank R., New York City
Lion Oil Co., El Dorado, Ark.
Mathieson Agricultural Chemicals Co., Little Rock, Ark.
McIver & Son, Alex. M., Charleston, S. C.
Phillips Chemical Co., Bartlesville, Okla.
United States Steel Corp., New York City
Woodward & Dickerson, Inc., Philadelphia, Pa.

SULFATE OF POTASH—MAGNESIA
International Min. & Chem. Corp., Chicago, Ill.

SULFUR
Ashcraft-Wilkinson Co., Atlanta, Ga.
Gen. Chem. Div., Allied Chem. & Dye, N.Y.C.
Mathieson Agricultural Chemicals Co., Little Rock, Ark.
Texas Gulf Sulphur Co., New York City
Woodward & Dickerson, Inc., Philadelphia, Pa.

SULFUR—Dusting & Spraying
Ashcraft-Wilkinson Co., Atlanta, Ga.
DuPont de Nemours & Co., E. I., Wilmington, Del.
Pittsburgh Plate Glass Co., Pittsburgh, Pa.
U. S. Phosphoric Products Div., Tennessee Corp., Tampa, Fla.

SULFURIC ACID
American Agricultural Chemical Co., N. Y. C.
Armour Fertilizer Works, Atlanta, Ga.
Ashcraft-Wilkinson Co., Atlanta, Ga.
International Min. & Chem. Corp., Chicago, Ill.
Lion Oil Company, El Dorado, Ark.
Monsanto Chemical Co., St. Louis, Mo.
McIver & Son, Alex. M., Charleston, S. C.
Southern States Phosphate Fertilizer Co., Savannah, Ga.
U. S. Phosphoric Products Division, Tennessee Corp., Tampa, Fla.
Virginia-Carolina Chemical Corp., Richmond, Va.

SUPERPHOSPHATE
American Agricultural Chemical Co., N. Y. C.
Armour Fertilizer Works, Atlanta, Ga.
Ashcraft-Wilkinson Co., Atlanta, Ga.
Davison Chemical Corporation, Baltimore, Md.
International Min. & Chem. Corp., Chicago, Ill.
Jackle, Frank R., New York City
Mathieson Agricultural Chemicals Co., Little Rock, Ark.
McIver & Son, Alex. M., Charleston, S. C.
Southern States Phosphate Fertilizer Co., Savannah, Ga.
U. S. Phosphoric Products Division, Tennessee Corp., Tampa, Fla.
Virginia-Carolina Chemical Corp., Richmond, Va.
Woodward & Dickerson, Inc., Philadelphia, Pa.

SUPERPHOSPHATE—Concentrated
Armour Fertilizer Works, Atlanta, Ga.
International Min. & Chem. Corp., Chicago, Ill.
U. S. Phosphoric Products Division, Tennessee Corp., Tampa, Fla.
Virginia-Carolina Chemical Corp., Richmond, Va.
Woodward & Dickerson, Inc., Philadelphia, Pa.

TALC
Ashcraft-Wilkinson Co., Atlanta, Ga.

TANKAGE
American Agricultural Chemical Co., N. Y. C.
Armour Fertilizer Works, Atlanta, Ga.
Ashcraft-Wilkinson Co., Atlanta, Ga.
International Min. & Chem. Corp., Chicago, Ill.
Jackle, Frank R., New York City
McIver & Son, Alex. M., Charleston, S. C.
Woodward & Dickerson, Inc., Philadelphia, Pa.

TEPP
Monsanto Chemical Co., St. Louis, Mo.
Virginia-Carolina Chemical Corp., Richmond, Va.

TOXAPHENE
Ashcraft-Wilkinson Co., Atlanta, Ga.
Gen. Chem. Div., Allied Chem. & Dye, N.Y.C.
Pittsburgh Agricultural Chemical Co., N. Y. C.

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DuPont de Nemours & Co., E. I., Wilmington, Del.
Gen. Chem. Div., Allied Chem. & Dye, N.Y.C.
Monsanto Chemical Co., St. Louis, Mo.
Pittsburgh Agricultural Chemical Co., N. Y. C.

2, 4, 5-T
Diamond Alkali Co., Newark, N. J.
DuPont de Nemours & Co., E. I., Wilmington, Del.
Gen. Chem. Div., Allied Chem. & Dye, N.Y.C.
Monsanto Chemical Co., St. Louis, Mo.
Pittsburgh Agricultural Chemical Co., N. Y. C.

UREA & UREA PRODUCTS
DuPont de Nemours & Co., E. I., Wilmington, Del.
Nitrogen Div., Allied Chemical & Dye Corp., N.Y.C

VALVES
Atlanta Utility Works, The, East Point, Ga.
Monarch Mfg. Works, Inc., Philadelphia, Pa.
Sackett & Sons Co., The A. J., Baltimore, Md.

ZINC SULFATE
Tennessee Corp., Atlanta, Ga.

The downfall of

'Willie the Cowboy'

WHAT happens when "Willie the Cowboy" tries to handle a lift truck like a hot-rod is shown in an interesting and effective new safety film produced by Clark Equipment Co.

The film, designed for training industrial truck operators in the safe operation of their vehicles, dramatically illustrates the features of safe driving. It shows the cause of most truck accidents and ways of avoiding them.

Clark claims its 30 minute sound film, called "Safety Saves," is the only training movie of its kind in existence.

Willie Makes Every Mistake

In the picture Willie makes every mistake in the book. He doesn't look where he is going, ignores overhead clearance and parks his truck in the middle of busy aisles.

Object of the film is to show how operators like Willie are menaces to fellow-employes, to the goods they are handling and to themselves.

In addition to showing the "don'ts" of industrial truck operation, the Clark movie illustrates safe methods.

Also Covers Towing Trucks

"Safety Saves" also contains instructions for operators of towing tractors and hand trucks.

The company says its film will be a "valuable tool for truck owners who want to reduce accidents and cut damage to goods."

The movie was filmed at locations in factories and warehouses while normal operations in the plants were underway.

If you want to show the Clark film to your employes, fill out a **Reader Service** card to get a reservation form, using **Code Number 3-5.**

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On Packaging, Delaney

WHAT'S all the fuss about packaging? That's a question you may have asked when you turned to the packaging section in this issue.

FARM CHEMICALS prepared the section because we feel the subject is of primary importance to the farm chemicals industry in these days of keenly competitive prices and rapid technological developments.

It is a big subject and it has many parts that are of interest to any company manufacturing and marketing fertilizers or pesticides these days.

It includes such things as machinery, materials, printing, brand design, labeling and even psychology.

How much does your company spend annually for these things? Very likely a big portion of your total expenditures. That is the primary reason the staff thought a section on packaging would be welcomed in the industry. We hope it will be of help to you.

We have tried to bring timely and pertinent information together on all these phases of packaging to give you readers an up-to-date summary of trends and developments.

Incidentally, FARM CHEMICALS welcomes comments from readers on the section. Is it the kind of thing you'd like to see in future issues of the magazine? What other subjects should be explored?

IN PREPARING the packaging section, incidentally, we came across an interesting note in a British publication apropos the subject.

Although the practice of printing fertilizer bags with designs for dresses and other garments is taken as a matter of course in this country, our English brethren in the industry are somewhat non-plussed by the idea.

British surprise at the dress-print custom is expressed in a recent issue of *Fertilizer and Feeding Stuffs Journal.*

"We are not above admitting that there have been times when tailor's bills plus other bills have tempted us into considering sackcloth," the editor writes, "but we never expected to see this secondary use of fertilizer containers skillfully and deliberately developed and all 'as part of the service.' "

The writer goes on to describe a recent Bemis Bro. Bag Co. advertisement which featured a photograph of a farm family outfitted with clothing made from cotton fertilizer bags.

The writer is forced to "confess admiration" for the idea and whimsically proposes a plan that may go Yankee Ingenuity one better.

"On the other hand," he writes, "looking at the frayed cuffs on our own overcoat, we can't help wondering whether the idea of packing in Harris Tweed could be experimentally considered."

EVERYONE in the pesticide industry is talking about the legislation now in congressional hoppers concerning use of chemicals in and on food.

They have a right to. For the bills forwarded by Rep. James M. Delaney (D-N. Y.) and Rep. A. L. Miller (R-Neb.) may have a far reaching effect on the industry and, of course, the nation as a whole.

Delaney, chairman of the special committee on chemicals in foods and cosmetics, has offered one bill; Miller, three.

General terms of each are described by our Washington correspondents in the Farm Chemicals Outlook column and in the Industrial News pages of this issue.

When the Delaney committee finished its extensive hearings last summer and issued reports covering its investigations it gave a clean bill of health to fertilizers but said, regarding pesticides that "it is essential that, before a pesticide is permitted to be used on a food, reliable methods of analysis for the quantitative determination of the chemical be available."

In light of the fact that no deaths have been proved to have been caused by pesticides on foods and the expressed willingness of the pesticide industry to police its own actions, FARM CHEMICALS feels that any great extension of federal control over the industry without proof that dangers exist will serve to delay and hinder the task of feeding the millions of persons who supposedly would benefit by such extension of control.

—HAMILTON C. CARSON

RURAL REVOLUTION

Since 1900, rural America has undergone an agricultural revolution. Many things have contributed to this change. FERTILIZER, the product of one of this country's great industries, has played a major part.

Potash Company of America, producer of a prime material for the fertilizer industry, is proud of its role in this expanding drama.

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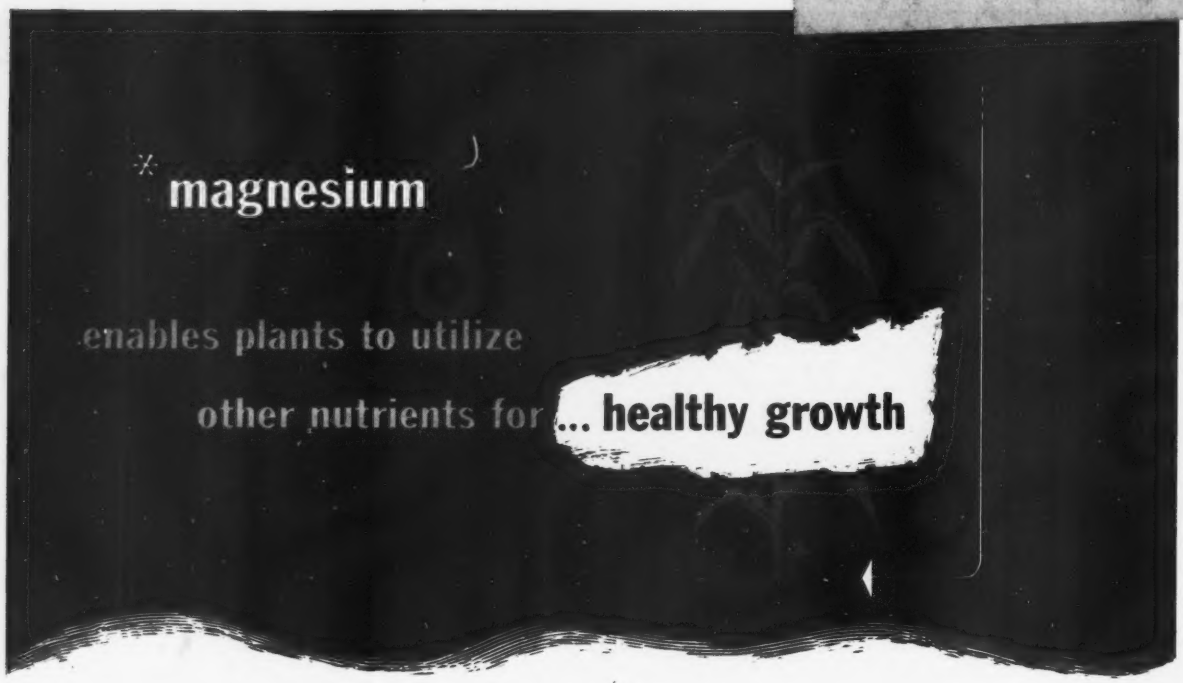

Include Soluble Magnesium in Your Quality Fertilizers

Sul-Po-Mag®

Water-Soluble
Double Sulfate of Potash-Magnesia

Magnesium is the basic metallic element in chlorophyll, the green plant substance which captures the sun's energy that is vital for life and growth.

Magnesium concentrates in the seed with phosphorus to aid in the formation of oils and proteins required for viable seed.

Magnesium functions as a carrier of phosphates to the actively growing and fruiting parts of the plant.

Magnesium is required to activate the processes which stimulate the production and transport of carbohydrates and proteins within the growing plant.

* **Magnesium, in sufficient quantities, enables the plant to utilize other plant nutrients for healthy, disease-resistant growth.**

Magnesium stimulates the growth of soil bacteria and increases the nitrogen-fixing power of legumes.

Plants, like people, can't have a healthy growth on a deficient diet. To supply all plant nutritional needs, fifteen chemical elements are required. Plants get these from the air, water, soil and fertilizer. A deficiency of only one element will stop plant growth regardless of how many other nutrients are available. A plant could literally starve in the midst of plenty. This is especially true when magnesium is lacking. For magnesium is required in large amounts for plants to utilize many other nutrients for vigorous disease-resistant growth.

Many soils are deficient in magnesium because of erosion, leaching, and heavy cropping. Whatever the cause of magnesium deficiency, this essential nutrient can be returned to the soil in available form by including soluble magnesium in the mixed fertilizer.

Sul-Po-Mag is a properly balanced combination of magnesium and potash—both in sulfate form, water soluble and immediately available to the crop. *Sul-Po-Mag* is the most practical and economical means of supplying soluble magnesium to growing crops. It helps give the plants a healthier start, hasten maturity . . . and increase yields and quality of tobacco, cotton, citrus, corn, small grains, potatoes, vegetables, legumes and other crops. You can obtain *Sul-Po-Mag*, produced exclusively by *International*, in bulk for your quality mixed fertilizers or bagged for direct application to the soil.

International Minerals & Chemicals

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